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# GEELONG NATURALIST

JOURNAL OF THE GEELONG FIELD NATURALISTS CLUB
P.O. Box 1047 Geelong 3220

Hon. Editor,
Margaret Cameron,
4 Connor Street,
East Geelong, 3219

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# Editorial

Good news at last! Urquhart's Bluff has been purchased as a reserve. This beautiful area, with its orchids and emu wrens, will now be preserved for the enjoyment of future generations. This happy result is a credit especially to Mary White and Angair, and illustrates many of the ingredients necessary for success in such issues– good information about the natural values of the area, tenacity and determination, well-prepared evidence for court hearings, and the ability to persuade supporters to give not only time and ideas but also money. The most important of all these is the basic information about why the area is important, what animals, birds, and plants are there, what results are likely if the nature of the area is drastically changed.

Can we provide the same information about other areas of natural bush, swamps, or sand-dunes in the region?

# Plant Life Around Tanybryn

**E.G. Errey**

During the Club's Janurary 1986 campout in the Otways, activities were restricted to forest areas, no heathland being visited. The Belmont High School camp at the old Tanybryn school on Wild Dog Creek Road is a fine place for quiet studies of bird, animal and plant life.

Of several plants that attracted attention even before we reached camp, the most conspicuous was Victorian Christmas-bush. Growing to medium tree size, this mint-bush lined the road in places, almost covered with white blossom. On some specimens the flowers were noticeably mauve-tinted. When a breeze stirred the vegetation, blossoms showered down like falling snowflakes. Several fine trees grew in the camp area.

Black Wattle also grew along the road from Forrest southwards. These trees were conspicuous not for blossom, but for ripe seed pods, which in many specimens almost obscured the foliage.

Forest Groundsel, growing to a metre or so high, provided a yellow border to the roads and tracks in damp, partly shaded areas.

No systematic search along fern gullies was attempted, but 22 fern species were listed during the weekend. These included four filmy ferns, four water ferns, and Weeping Spleenwort as well as the more common Mother Spleenwort. The most exciting find was Long Fork Fern, growing on a treefern trunk with Filmy and Finger-fern in the Barham Valley. This was the only species not found in close proximity to the camp.

Our visit to the Barham Valley north of Apollo Bay was in search of a stand of very tall Mountain Ash reported to be growing in the hinterland. In spite of a strenuous scramble up a steep gully and a hike through trackless bushland beyond, lack of sufficient time prevented us from reaching the area, though we passed through stands of fine timber, mainly Mountain Ash and Messmate Stringybark. These two were sometimes not easy to separate, for their foliage was high and difficult to see. The bark of the messmates, usually easy to recognize in drier districts, appeared similar to that of other eucalypts, for the high rainfall and dense canopy encouraged the growth of mosses, liverworts and lichens until the fibrous bark took on an almost slimy appearance. When a handful was clawed out, however, the stringybark nature of the covering was readily apparent.

A Cinnamon Orchid with a stem of flowers over half a metre tall, was found growing beside Turton's Track. Apart from this, the only orchid seen was an unidentified greenhood, whose ripe seed-pods were found in the same area.

Three introduced plants close to the camp are common on roadsides and grassland in various parts of the Otways. One was Yarrow, found in many herb gardens, and said to be very beneficial in compost heaps. The second, Sticky Bartsia, has no use; in fact, because it is a root parasite on grasses, it would be detrimental in pastures. The third, Sweet Melilot, as a relative of the clovers, has some fodder value when young, though it is reputed to flavour eggs and milk.

More widespread through the forest is Tutsan, a relative of St John's Wort. Though often grown as a garden shrub, it has long been a proclaimed weed for the whole state.

Also plentiful along the roadsides was Montbretia, one of many bulbous flowers that have escaped from gardens. It was probably thrown out originally with garden rubbish, and now competes with the native flora, often growing so densely as to smother any other plant in wet places such as table drains.

The following is a list of most of the species that came under our notice during the weekend. (* indicates introduced species)

**Ferns:–**

| | |
|---|---|
| *Asplenium bulbiferum* | Mother Spleenwort |
| *Asplenium flaccidum* | Weeping Spleenwort |
| *Blechnum chambersii* | Lance Water-fern |
| *Blechnum fluviatile* | Ray Water-fern |
| *Blechnum minus* | Soft Water-fern |
| *Blechnum wattsii* | Hard Water-fern |
| *Ctenopteris heterophylla* | Gipsy Fern |
| *Culcita dubia* | Common Ground-fern |
| *Cyathea australis* | Rough Tree-fern |
| *Dicksonia antarctica* | Soft Tree-fern |
| *Grammitis billardiera* | Finger Fern |
| *Histiopteris incisa* | Bat's-wing Fern |
| *Hymenophyllum australe* | Austral Filmy-fern |
| *Hymenophyllum flabellatum* | Shiny Filmy-fern |
| *Hymenophyllum cupressiforme* | Common Filmy-fern |
| *Hymenophyllum rarum* | Narrow Filmy-fern |
| *Hypolepis rugosula* | Ruddy Ground-fern |
| *Microsorium diversifolium* | Kangaroo Fern |
| *Polystichum proliferum* | Mother Shield-fern |
| *Pteridium esculentum* | Austral Bracken |
| *Rumohra adiantiformis* | Leathery Shield-fern |
| *Tmesipteris billardieri* | Long Fork-fern |

**Flowering Plants:–**

| | |
|---|---|
| * *Achillea millefolium* | Yarrow |
| *Amyema pendulum* | Drooping Mistletoe |
| *Australina muelleri* | Shade Nettle |
| *Clematis aristata* | Australian Clematis |
| *Coprosma hirtella* | Rough Coprosma |
| *Coprosma quadrifida* | Prickly Coprosma (Prickly Currant-bush) |
| *Correa lawrenciana* | Mountain Correa |
| * *Crocosmia aurea* | Montbretia (Golden Copper-tip) |
| *Eucalyptus obliqua* | Messmate Stringybark |
| *Eucalyptus regnans* | Mountain Ash |
| *Gastrodia sesamoides* | Cinnamon Bells |
| *Hedycarya angustifolia* | Austral Mulberry |
| *Helichrysum dendroideum* | Tree Everlasting |
| * *Hypericum androsaemum* | Tutsan |
| * *Melilotus indica* | Sweet Melilot |
| *Mentha laxiflora* | Forest Mint |
| *Olearia argophylla* | Musk Daisy-bush |
| *Olearia lirata* | Snow Daisy-bush |
| * *Parentucellia viscosum* | Sticky Bartsia |
| *Phebalium squameum* | Satinwood |
| *Pimelea axiflora* | Bootlace-bush |
| *Pittosporum bicolor* | Banyalla |
| *Prostanthera lasianthos* | Victorian Christmas-bush |
| *Prunella vulgaris* | Self-heal |
| *Pterostylis sp.* | Greenhood |
| *Sambuccus gaudichaudiana* | White Elderberry |
| *Senecio vellioides* | Forest Groundsel |
| *Stellaria flaccida* | Forest Starwort |
| *Tetrarrhena juncea* | Forest Wire-grass |

E.G. Errey, 3 Leonard St, Belmont 3216.

# Eagle Rays in the Shallows

### Beverly Morwood

**Place:** Beach at Indented Head.
**Date:** February 1st. 1986.
**Time:** 5.30 p.m.
**Tide:** Nearly full.

This observation began with our neighbor, who was playing ball with his son in the water 30 yards out, calling to us on the beach, "There's a stingray coming in".

We went to the water's edge and, in about a minute, saw a large stingray swimming across the sand, and to our surprise, right up to the water's edge.

It was bluff coloured with lighter markings and small patches of bright blue on its back. It was about 90cms across from tip to tip of its flippers, and about 50cms from the snout to the beginning of its tail. The tail was about 30cms long with a black line along it.

It was accompanied by a smaller stingray swimming on either side of it, three together. They were of the buff colour merging darker to black at the tips of the flippers. They were about a third of the size of the larger ray.

The large one lay still on the sand barely covered by the water and facing out to sea, seemingly unaware of the six spectators taking great interest in it.

The two smaller ones swam around, still on either side, several times, seeming as if they wanted to swim back out to sea, but returning each time to the adult.

After about 10 minutes the large ray decided to return from whence it had come and the smaller ones accompanied it.

They travelled on the surface for about 100 yards staying together, as we could tell, by all the flippers being together as they broke the water, looking a bit like sharks' fins.

They were then over the reef and submerged, disappearing from view.

Was it a female with two young ones?
Do adult stingrays care for their young until they are mature?
A windsurfer had been practising in that vicinity at the time of their appearance.... Did they come to shore to avoid, what they thought was a predator?
Did they swim back on the surface because of the legs of the swimmers, who were still in the water, being a hazard underneath?

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Scott, T.D., Glover, C.J.M. and Southcott, R.V. (1980) *The Marine and Freshwater Fishes of South Australia* (2nd edition) Government Printer, Adelaide.

Beverly Morwood, 5 Ascot St, Newtown 3220.

**Editor's Note:**
These rays seem to be Eagle Rays *Myliobatis australis;* the Eagle Ray is distinctive in its shape with angular not rounded wings, and blue spots and cross bands extending across the body and wings. The tail is long and whip-like, with a spine-like sting. The flat grinding teeth are well adapted for crushing oysters and other shellfish on which the Eagle Ray feeds.

# The Marbled Gecko *Phyllodactylus Marmoratus* In Geelong

**Lawrie Conole**

This paper reports on the observation of three Marbled Geckos *Phyllodactylus marmoratus* at the author's home in Geelong West, and a population near the Marnock Vale mill in Newtown near the Balyang Sanctuary. The Marbled Gecko is not generally regarded as a naturally occurring species in Geelong urban environments, and all of these occurrences may stem from introductions by man.

Over a period of approximately five to six years, the author has caught three Marbled Geckos at his home in Clarence Street, West Geelong. There is no remnant vegetation or landscape of a natural or undisturbed nature in close proximity, and the area is a long established urban environment. The Geckos seem to have reached the location by transportation of firewood from forest and farm plantation origins. Prior to 1980, firewood was either procured from city fuel merchants or other city sources (carpentry offcuts, demolished buildings, garden trees etc.). During this time no reptiles were seen at home. In the early 1980's firewood was purchased directly from a merchant at Anakie near the Brisbane Ranges. It was about this time that two different individual Marbled Geckos were captured some months apart foraging around external lights on the house at night. These Geckos were liberated at the location of the Newtown population. After this followed a period of several years in which city sources of firewood were again used, and during which time no Geckos were observed at home. In the winter of 1985, a large amount of well weathered Sugar Gum *Eucalyptus cladocalyx* from a farm plantation at Lismore was purchased. In January 1986 a third Marbled Gecko was found on the back of the house after dark.

The situation is an interesting one as the appearance of the Geckos at home coincided with the arrival of the Anakie firewood. No further Geckos were seen until the purchase of the Lismore wood. It is possible but not probable that the 1986 Marbled Gecko was a survivor from an earlier introduction. The pattern of occurrence of the Geckos at home has a correlation with the manner of harvesting and storage of the wood prior to its sale. In the period when there were no Geckos at home, the wood was from the following backgrounds:

(i) scrap timber from building and demolition sources in Geelong,
(ii) firewood from a Geelong fuel merchant who had either brought standing timber straight into town after felling allowing no opportunity for Geckos to colonise, or
(iii) firewood stored so long in town that various factors had eliminated any Gecko population.

In contrast, when Geckos were present at home, the wood was from the following sources:

(i) timber already on the ground cut in a forest or farm plantation and stored there for some time before sale,
(ii) timber which had been cut from standing trees but stored on a farm for a considerable time and which had developed a rich and diverse insect fauna.

I think that the manner of harvesting and storage of the firewood determines the likelihood of introducing lizards into the urban environment.

The population of Marbled Geckos at Newtown was first shown to me by its discoverer, Geelong herpetologist Peter Tremul. The site occupied is an old quarry overgrown by Prickly Pear *Opuntia* species. The author is not aware of the provenance of this population, but if *P. marmoratus* is a resident of the Brisbane Ranges as appears to be the case, the Newtown Geckos may represent a relic which has survived a local decline in range of the species. It may of course be that the Newtown population has stemmed from and is maintained by introduction into Geelong in firewood.

Cogger (1979) shows the distribution of *P. marmoratus* as including the area of Victoria around Port Phillip Bay. Interestingly though, the author has never encountered the species in natural habitats around Geelong despite the ease with which this species is usually detected in more northern parts of the state. Museum of Victoria herpetologist John Coventry (pers. comm) has said that *P. marmoratus* is widespread in Melbourne and appears to have expanded its range. He believes the species to be of natural occurrence there, but the author speculates that introductions have assisted the spread of the endemic population.

Although other reptiles do occasionally come into Geelong in firewood, the author has only recorded the Marbled Gecko at his home. Conceivably, nocturnal and arboreal Geckos would be less susceptible to predation in Geelong than would diurnal and largely terrestial snakes, skinks and dragons. Skinks do occur (often naturally) in urban environments, but lone individuals or small groups would be unlikely to make successful introductions.

## REFERENCE

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L.E. Conole, 85 Clarence Street, West Geelong 3218.

# The Geelong Field Naturalists' Club President's Report 1985-86

The past year has been one of mixed success – we have had as guests some most entertaining speakers and we have visited many interesting places on excursions, yet we have been unable to resolve the matter of incorporation and our achievement in conservation issues has been less than we had wished.

Our general meetings have been well attended throughout the year, and our guest speakers were Barbara Wilson (fauna recovery after the Ash Wednesday 1983 fires), Edmund Gill (lower Barwon geomorphology), Winston Loveland (peaflowers), Robin Hirst (Halley's Comet), and Peter Kinchingham (marine study). In addition we had a question night and three members' nights. I would like to record the appreciation of all members for the effort provided by all speakers.

Excursions have been equally diverse and to some extent they have paralleled the speakers' topics – thus we visited Connewarre, Anglesea, Moggs Creek and Lorne, Bellarine Peninsula, Mt. William (archaeological site), Long Forest, Moolap and Pt. Henry, and the Point Lonsdale rock platforms. Our January campout at Tanybryn was most successful.

Our input to conservation issues has been keen, but without achieving very much success. Lake Murtnaghurt, Fort Island and Sand Island have been visited and approaches made for action to retain their natural history values, but there remain unanswered questions on each. The Flora and Fauna Guarantee, Belchers' bushland, Teesdale sheoak reserve, Mallee clearing and woodchip are also matters taken up by the Club. The dispersal of seeds during Arbour Week and the proposed development of a water-sports complex on the Belmont Common have also been of concern to us.

While we have yet to resolve the incorporation issue, we have seen improvements by providing a lectern at the general meetings and by initiating an excursions record book. During the year we have been able to support the Friends of the You Yangs and witness the creation of the Friends of Marine Parks.

Our representatives on the Committees of Management of the You Yangs, Ocean Grove Nature Reserve and Inverleigh Common continue to do excellent work in promoting this Club and ensuring that the natural history of the areas is protected.

The Bird Group has remained active with monthly meetings and excursions – we have seen the group members involved in wader counts, Orange-bellied Parrot surveys, studies at the You Yangs and Project Pelican (for the Bird Observers Club). The public bird-watch on the Belmont Common in October was a great success.

I would like to take this opportunity to express my thanks to all who so willingly gave their time and energy during the year. As a large Club, we have a wide range of tasks to fulfill and without many people working in the background, it would be impossible to carry out the role of President. It is with sadness that I record the death of one of our hard-working Committee Members, John Bowden-Perry, during this year.

The gradual fall in membership and the number of unresolved issues make the coming year one that will provide us with a challenge that can be faced only through the full support of all members. I am confident that this will be freely given whenever it is sought by our hard-working committee.

Trevor Pescott.
President

# Treasurers Report 1985-86

The end of the financial year sees the club with just one account. As it had outlived its usefulness, the No. 3 Account was absorbed into the General Account last October. The combined funds enable the club to invest at higher rates more easily, and also reduce unnecessary book-keeping.

Due recognition must be given to the contribution the No. 3 Account has made to the Club over the ten years since its inception in 1975. In 1975, when the late Mr. Jack Wheeler B.E.M. first published his booklet *The Care of Sick, Injured, and Orphaned Native Birds and Animals*, the account was formed, to keep expenses and proceeds relating to the book separate from the general club funds. The success of the booklet has been outstanding. The first printing in 1975 was 10,000 copies; a futher 15,000 copies were printed in 1977 and another 2000 copies in 1984: a total of 27,000 copies so far. Orders still come from far and wide throughout Australia, and one this year came from Indonesia.

Our Deposit Stock, now combined, is $12,400. This enabled us to invest $10,000 in a higher interest rate Term Deposit in the last four months of our financial year. The $2,000 donated to us last year by the Ministry of Conservation for the publication of a book on the Barwon River, and $530 donated by the Bird Environment Council for construction of a bird hide at the Ocean Grove Nature Reserve, are included in this sum. The very handsome sum of $4,701.77 transferred to the general club funds on the closing of the No. 3 Account is also included. The club has certainly benefited greatly from the publication of the booklet.

Revenue from subscriptions in $279.50 less than last year. We must note with some concern that the number of paid membership "units" at January this year is 62 less than at this time 3 years ago (201 compared with 263). These figures do not included the number of "free exchange" memberships we have.

We received $398.75 from the South Barwon Recreation Voucher scheme, and the trading table continues to make a very helpful contribution to our funds ($241.45). We have gained funds from the sale of publications, namely 20 R.A.O.U. calenders (sold at $2.00 profit), and 28 (so far) Halley's Comet booklets at a profit of $1.00 each.

During the year we contributed to several appeals – our biggest donation being $100.00 to the Victorian Conservation Trust for the Ralph Illidge Sanctuary Appeal. $50.00 was donated to each of the following: A.C.F. Daintree Campaign, East Gippsland Coalition, and the A.C.F. World Heritage Areas Appeal. $20.00 was donated to the Science Talent Search.

I would like to thank Mrs Joy Pearce for assisting me in receiving payments and reading reports in my absence, and special thanks to Mr. Barry Redman for auditing these books.

Diana Primrose
Honorary Treasurer

## Receipts and Payments Account for Year Ended 27th February 1986

| Receipts | | Payments | |
|---|---|---|---|
| Subscriptions | $2410.00 | Printing & Stationery | $1440.40 |
| Donations | 985.25 | Postage | 461.35 |
| Interest | 1064.59 | Club subscriptions | 225.50 |
| Trading table | 241.45 | Donations – use of hall | 270.00 |
| Sale of badges | 3.60 | Donations – appeals | 270.00 |
| Bird group use of hall | 31.00 | Insurance | 174.95 |
| Excursions | 460.80 | Excursions | 407.00 |
| Publications – sale | 420.20 | Publications – purchase | 171.00 |
| Sundries | 10.00 | Library purchases | 106.64 |
| | | Equipment purchase | 66.87 |
| | | Sundries | 109.58 |
| | 5626.89 | | 3703.29 |
| TFR Gen a/c Dep. Stock | 5600.00 | TFR to Deposit Stock | 3000.00 |
| TFR No. 3 a/c chq. a/c | 301.77 | TFR to Term Deposit | 10000.00 |
| TFR No. 3 a/c Dep. Stock | 4400.00 | | |
| | 15928.66 | | 16703.29 |
| Cash Book Balance at 7/3/85 | 2405.66 | Cash Book Balance at 27/2/86 | 1631.03 |
| | $18334.32 | | $18334.32 |

Deposit Stock Balance 25/2/86: $12,400

## No. 3 Account

| Receipts | | Payments | |
|---|---|---|---|
| Donations for Booklets | $248.60 | Postage | $20.00 |
| Interest | 192.70 | Sundries | 1.08 |
| | 441.30 | | 21.08 |
| | | TFR Gen a/c Dep. Stock | 1000.00 |
| | | TFR Gen a/c chq. a/c | 301.77 |
| | | | 1322.85 |
| Cash Book Balance at 7/3/85 | 871.55 | Cash Book Balance at 27/2/86 | NIL |
| Plus stale cheque | 10.00 | | |
| | $1322.85 | | $1322.85 |

No. 3 Account closed 28/10/85

# Records of Gang-gang Cockatoos in Bacchus Marsh in 1985/6

**Marilyn Hewish**

Although I have been observing birds in the township of Bacchus Marsh since 1980, I did not see Gang-gang Cockatoos (*Callocephalon fimbriatum)* here until the winter of 1985. Since then I have recorded a party of three birds present from 28th April to 5th May, 1985, a single bird present from 5th-11th November, 1985, and single sightings of 1 bird on 26/10/85, 1 bird on 15/2/86, and 3 birds on 20/3/86.

The family party, first noted on 28th April, consisted of a male, a female and an immature male. They frequented a small stand of Sugar Gums *(Eucalyptus cladocalyx)* on the outskirts of town, and spent the daylight hours feeding on the fruits. Each afternoon between 4 and 5 p.m. they would come down to drink at a small garden pond, and then fly to a group of taller eucalypts a short distance away, presumably to roost for the night.

They were extremely tame and unobtrusive birds, spending long periods in one position or crawling quietly through the foliage. They were usually detectable only by their soft, creaking calls, or by the sound of the fruits being crushed in their strong bills.

The young bird, however, was not always as sedate as the adults. It was more clumsy in its movements around the tree, occasionally losing its balance and fluttering awkwardly. It was seen once under a lawn sprinkler. Its approach was cautious, as it surveyed the area while hanging sideways on a nearby fence. Then it walked to the sprinkler, and climbed on top of it, with its breast on the outlet. Soon it was soaking wet, with its crest hanging in a sodden fringe over its eyes. Whether it was bathing or drinking, it certainly enjoyed the water to the full. On the ground it was very nervous, and flew back to the trees at the first approach of an observer.

Gang-gang Cockatoo Photograph: Trevor Pescott

The single Gang-gang seen several times between 5th and 11th November, was a female, probably immature, keeping company with a flock of 10-12 Galahs. The Galahs were usually seen in the early morning or late afternoon, calling noisily and wheeling between the trees by our back fence, and the presence of the quieter, more restrained Gang-gang was revealed by its call. As the Galahs screeched and chased in their progression from tree to tree, the Gang-gang followed, dipping down and swooping up to alight.

On November 5th, I was surprised and delighted to see this bird indulging in the antics, which are usually associated with its companions. While perching on a telegraph line it was approached by a Magpie Lark, whereupon it fell forward to hang upside down, swinging gently and holding its wings outstretched in a typical Galah attitude.

After 11th November, there were still flocks of Galahs in the area, but the Gang-gang was no longer with them.

The closest occurrences of Gang-gangs recorded in two Atlas Projects were in the wetter forest areas of the Blackwood Ranges, to the north of Bacchus Marsh (Aston and Balmford, 1978; Blakers *et al*, 1984). Although Gang-gangs are known to disperse in winter from forests to more open woodlands and even urban gardens (Forshaw, 1981), they were not recorded in blocks including Bacchus Marsh during the Atlas Projects, covering 1976-1981, or during my observing period from 1980 to mid-1985. Thus it has been a very rare bird here, and this makes the recent increase in sightings all the more interesting.

Thomas and Wheeler (1983) note that the Gang-gang is rather rare in the Blackwood Ranges, but suggest that it may be extending its range. This, together with the presence of a favoured food tree, the Sugar Gum (Pescott, 1983) in the town, may explain the visit of the family party during the winter dispersal period.

The November visitor appeared to be a young bird. In the non-breeding season, it is usual for Gang-gangs to form flocks, presumably including the young birds of the previous season. Nomadic movement is also common (Forshaw, 1981). Thus the behaviour of this bird was characteristic of the species, but it had 'got in with the wrong crowd', and learnt some 'bad habits' as well. Forshaw (1981) reports that the Gang-gang and the Galah have been hybridized in captivity, and suggests that this may indicate affinities between the two species. Perhaps this explains how the inexperienced Gang-gang could have made the error, and why the Galahs tolerated the ring-in.

The Gang-gang Cockatoo seems to me to be a bird of much character. As I have watched the birds in Bacchus Marsh, I have found their quietness and trustfulness, as well as their occasional outbursts of comic behaviour, very endearing. I hope that they will continue their visits to this area in the future.

## Acknowledgments

I would like to thank Jean Lycette of Bacchus Marsh for the use of her observations on the birds present in April-May.
The Royal Australasian Ornithologists' Union allowed access to its 10' block records for the *Atlas of Australian Birds*.

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Marilyn Hewish, 74 Wellington St., Bacchus Marsh Vic. 3340.

# Records of the Masked Owl *Tyto Novaehollandiae* from the Geelong Area, Victoria

**Lawrie Conole**

## Introduction

Knowledge of the large Tyto owls, Masked Owl *Tyto novaehollandiae* and Sooty Owl *T. tenebricosa*, has only recently begun to grow appreciably. In particular, in western Victoria, the status of these species has only just begun to be understood. Previously, the range of the Sooty Owl was thought to extend no further west in Victoria than the Dandenong Ranges near Melbourne, and a record during the field atlas from Blackwood was unconfirmed (Blakers *et al* 1983). Sooty Owls have been reported from the Lorne area in the Otway Ranges (Conole 1985). It would appear that Sooty Owls are very rare in the Otways, but future field work may clarify this. The Masked Owl is known to perhaps even fewer Victorian naturalists than is the Sooty Owl. There were no field atlas records west of Melbourne in Victoria, and Blakers *et al* (1985) remark "The Masked Owl is so rarely observed on the Australian mainland and its call so often unrecognised that the Field Altas map incompletely represents its distribution." In Victoria, most records came from East Gippsland (Blakers *et al* 1985).

My field experience of the Masked Owl began in 1979 with the Tasmanian sub-species *T. novaehollandiae castanops*, at which time the call was learned. The first occasion on which I heard a mainland Masked Owl was on 7 March, 1980 at Tipperary Springs, Wombat State Forest near Daylesford. Near Sheoaks Picnic Area, Angahook-Lorne Forest Park on 16 January 1982, I observed a pale morph Masked Owl. Nocturnal ornithologist Paul Peake of Monash University confirmed Masked Owls at the Angahook-Lorne site when he observed two there later in the year. I have observed two separate Masked Owls, one dark morph and one pale, at the You Yangs Forest Park. Paul Peake and I on a third occasion heard a Masked Owl at the You Yangs. Other records for the Geelong area are listed in table 1 and mapped in figure 1; they include Bambra in 1900 (Belcher 1914), Birregurra in 1956 (J. McKean *pers. comm*) Bancoora and Point Addis in 1983 (Pescott 1983), Tanybryn in 1984 (Menkhorst *in* Drummond 1986), Wombat State Forest in 1985 (M. Schulz *pers. comm.*). and Steiglitz between the mid-1800's and 5000-10000 years B.P. (Conole & Baverstock 1985). Schulz (*pers. comm.*) believes that *Tyto* owl pellets, containing European Rabbit *Dryotolagus cuniculus* remains, from rock shelters at the You Yangs, to be of the Masked Owl.

## Details of my Records

(A) Sheoaks Picnic Area, Anagahook-Lorne Forest Park.
On the night of 16 January 1982, Grant Baverstock and I were driving down Garvey Track at about 22:00 hours toward Sheoak Picnic Area. Approximately one kilometre from the picnic area, the head lights of the car revealed a large *Tyto* owl on the track. Before it flew I was able to identify it as a Masked Owl due to its very large size (almost Powerful Owl *Ninox strenua* size), white facial disc and underparts, brownish upperparts and feathered tarsi. The habitat at the location was tall open-forest of Blue Gum *Eucalyptus globulus* grading to tall woodland of Blue Gum and Mountain Grey Gum *E. cypellocarpa* on the ridge. Paul Peake (*pers. comm.*) with others saw two at this site later in the year.

(B) Western Plantation – Wooloomoonata Station, You Yangs Forest Park.
The observation on 27 May 1984 of a dark morph Masked Owl has previously been documented by Conole (1984, 1985) and Conole in Drummond (1986). My interest was initially aroused by a very vocal Collared Sparrowhawk *Accipiter cirrhocephalus* which in turn revealed the Masked Owl as it mobbed the owl. I speculate that the owl had probably been driven from cover initially by mobbing birds including the Sparrowhawk, as Masked Owls are known to utilise dense foliage for roosting (Schodde & Mason 1980). The tree in which the owl was seen had very dense coppice growth around damage to the trunk in the crown of the tree. The owl was easily identified at close range by its very large size, chestnut facial disc and feathered tarsi.

(C) Cressy Gully, You Yangs Forest Park.
This observation is also recorded by Conole (1985). On 26 October 1984 whilst driving on the Great Circle Drive at about 22:00 hours, I flushed a pale morph Masked Owl from a roadside perch. Once again, identification was made by noting the large size, strongly feathered tarsi, and by direct comparison with Barn Owls *T. alba* on adjacent farmland. The Masked Owl was in open-forest of Manna Gum *E. viminalis* adjacent to a large clearing.
On a subsequent visit on 11 January 1985, Paul Peake and I did not observe any Masked Owls, but heard the distinctive vocalisation of the species. Three days later the You Yangs experienced a severe wild fire and no Masked Owls have been recorded there since.

(D) Steiglitz Historic Park.
The record of the Masked Owl at Steiglitz relates to the period prior to the goldrush era of the mid-1800's back to 5000-10000 years before the present. I have been excavating mammalian sub-fossil remains thought to have been deposited by Masked Owls in a cave at Steiglitz. There have been no recent records of the Masked Owl in the Brisbane Ranges, and the cave deposit is static.

## Notes on Field Recognition of Masked Owls in the Geelong Area.

I support the view of Blakers *et al* (1983) and Schodde & Mason (1980) that lack of field observations of Australian Masked Owls has led to their biology being largely unknown. With this in mind, I hope the following notes will be of some assistance in the field, and encourage local interest in the biology of the Masked Owl. Whilst undoubtedly Masked Owls are rare or uncommon locally, the two dead specimens found after the Ash Wednesday wildfire serve as reminders that the Geelong area may support a largely undetected population of Masked Owls.

### Appearance:

The Masked Owl occurs in three colour morphs (Schodde & Mason 1980) and I have observed two locally. Of the three Masked Owls observed, two have been of the pale morph which resembles an enormous Barn Owl. The pale morph resembles the Barn Owl in that the facial disc is white, underparts are white with speckling on the breast, and upperparts are a buff colour with darker speckling. However, in contrast with the Boobook-sized Barn Owl, Masked Owls are very large – approaching the Powerful Owl in size, and have strongly feathered tarsi. (Barn Owl tarsi are naked.) One Masked Owl observed at the You Yangs was of the dark colour morph, which is a much darker brown on the back and has a tawny colouration over the underparts and face. The third morph is intermediate between the others. I have not observed it locally. Sooty Owls are distinguished from the Masked Owl by their smaller size (but they are larger than Barn Owls) and dark sooty-grey above with white spotting, have a greyish breast and whitish belly, and a grey facial disc with enormous eyes (proportionately the largest eyes of any *Tyto*). Characteristically, Sooty Owls often adopt a hunched stance in contrast to the generally more upright stance (except when displaying threat etc.) of the Masked Owl.

Excellent plates can be found in Schodde & Mason (1980), and reasonable plates in Simpson & Day (1984).

**Voice:**

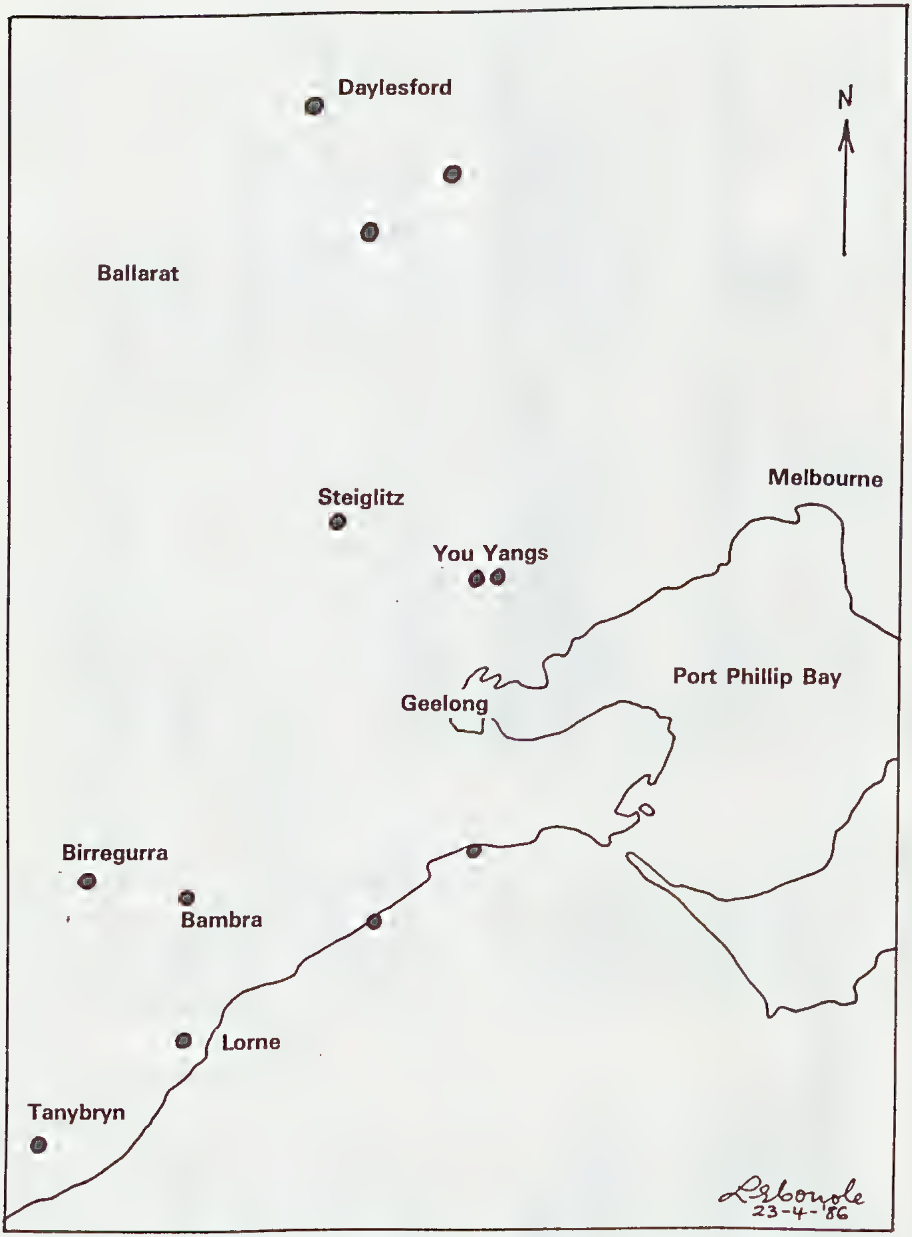
All *Ninox* owls (Powerful, Barking, Southern Boobook) in our area give a double-note hooting call and do not resemble *Tyto* in voice, although Barking Owls give an occasional tremulous scream. *Tyto* owls generally scream, screech, whistle, click and buzz. One call of the Masked Owl has been described as resembling a louder and deeper Barn Owl call, but this is neither entirely true nor helpful. The call of the Masked Owl that I have heard locally has been a VERY loud, drawn-out, descending screech of tenor quality. In contrast the *skee-air, sk-air* of the Barn Owl is abrupt, slightly ascending, and falsetto in quality. The "falling bomb" whistle together with mechanical clicks and buzzes readily identifies the Sooty Owl. Masked Owls do have conversational clicks and chirrups but the screech is a much more useful field mark.

### Table 1
### Masked Owl Records in the Geelong Area

| LOCALITY | DATE | HABITAT | SOURCE |
|---|---|---|---|
| Bambra | 1900 | - | Belcher (1914) |
| Birregurra | 1/1956 | - | McKean (pers. comm.) |
| Lorne | 16/1/1982 | *E globulus* tall open-forest & tall woodland | Conole (1985) |
| | 1982 | ditto | Peake (pers. comm.) |
| Bancoora | 2/1983 | dead on beach | Pescott (1983) |
| Point Addis | 2/1983 | ditto | Pescott (1983) |
| Tanybryn | 14/4/1984 | tall open-forest/farmland (roadkill) | Menkhorst in Drummond (1986) |
| You Yangs Forest Park | 27/5/1984 | *E cladocalyx* plantation & *E camaldulensis* woodland | Conole (1984, 1985) |
| | 26/10/1984 | *E. viminalis open-forest* | *Conole (1985)* |

| | | | |
|---|---|---|---|
| | 11/1/1985 | ditto | Conole (1985) & Peake |
| Wombat State Forest: | | | |
| (i) Tipperary Springs | 7/3/1980 | *E viminalis* tall open-forest | Conole |
| (ii) Blakeville | 3/1985 | *E radiata/E viminalis* open-forest | Schulz (pers. comm.) |
| (iii) Trentham | 9/1985 | *E radiata/E rubida/E viminalis* tall open-forest | Schulz (pers. comm.) |
| Steiglitz | B.P. | *E polyanthemus* low-open forest & *E. baxteri* open-forest | Conole (1985) & Conole & Baverstock (1985) |

Figure 1



Map of Masked Owl Records in the Geelong Area

## Habitat:

The Masked Owl tends to forage along the ecotone between forest and clearing, and so can be expected in forest clearings, edges of forests, forest roads and some woodlands. Barn Owls generally favour very open habitats such as grasslands, farmland and some woodlands. The Sooty Owl is a closed-forest specialist, and is rarely seen away from rainforest and dense gull forests.

## Conclusion

The Masked Owl is a rare to uncommon but widespread species in the Geelong area. Infrequently observed in the area, Masked Owls have been found in high-rainfall tall open-forests as well as some drier open-forests and woodland. The paucity of records may be at least partly attributable to lack of night-time surveys and observers' unfamiliarity with or ignorance of the Masked Owl. The difficulty associated with detection of the Masked Owl could possibly be partly overcome by the use of taped calls during the nesting season when the owls can be expected to be strongly territorial. Literature sources imply that the Masked Owl nests opportunistically; but I suggest that some seasonality in breeding could be expected in a stable environment such as high-rainfall tall open-forest. If, as with other large Australian owls, nesting occurs in winter, this would appear to be the best time to survey Masked Owls in high-rainfall forests in the Geelong area.

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NATURAL HISTORY

# Purple-crowned Lorikeets feed on Boxthorn Leaves

### Trevor Pescott (for the Bird Study Group)

Boxthorn *(Lycium ferocissimum)* is a noxious weed introduced from South Africa over 100 years ago mainly for use as a hedge in the open farmland of south-western Victoria.

Related to such well-known plants as tomato, potato and tobacco, boxthorn unless kept trimmed into a hedge can be a pest by overrunning grazing land and serving as a harbor for rabbits.

Purple-crowned Lorikeet

While the bushes have limited use as native bird habitat, they are a favourite nesting site for House Sparrows *(Passer domesticus)*, while the little orange-red berries are eaten by some birds and foxes, and they may become the breeding place of fruit fly, dried fruit beetles, tomato fly and the common house fly (Parsons 1973).

On 9 February 1983, Mr. G. McCarthy watched Purple-crowned Lorikeets *(Glossopsitta porphyrocephala)* feeding apparently on the leaves of boxthorn bushes growing near the Barwon River in Highton.

On 3 May 1986, members of the G.F.N.C. Bird Study Group saw five Purple-crowned Lorikeets feeding in a small (2 m high), spindly boxthorn bush near the Information Centre at the You Yangs. Through binoculars, we could see that the birds were eating the fleshy, yellowish leaves of the bush.

On close inspection, the bush was found to have neither fruits nor flowers on it, and many of the leaves had the top half nipped away. Purple-crowned Lorikeets are recorded as feeding on pollen, nectar, blossoms, native and cultivated fruits, berries, seeds and possibly insects and their larvae (Forshaw 1969).

At the time of our observation, many Yellow Gums *(Eucalyptus leucoxylon)* were in flower nearby, and there were large numbers of Purple-crowned Lorikeets, Swift Parrots *(Lathamus discolor)* and various honeyeaters feeding on the blossom of these trees.

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# Birds of the Long Forest: part 1

### Marilyn Hewish

In the Long Forest area between Melton and Bacchus Marsh there is a mixed eucalypt woodland of approximately 800 ha., of which half consists of pure stands of Bull Mallee *Eucalyptus behriana*. Patches of Bull Mallee occur within an open woodland, mainly Grey Box *E. microcarpa*, Red Box *E. polyanthemos*, and Yellow Gum *E. leucoxylon*. This is an isolated and unique occurrence of mallee south of the Divide, with the nearest similar vegetation occurring near Bendigo, approximately 120 km. away. In addition, there are several plant species in the area which are more commonly associated with the drier mallee country to the north and north-west of Victoria, so that the Long Forest mallee forms a unique vegetation community.

The Long Forest exists on an island of ancient shales and sandstones, surrounded by volcanic plains. It forms a strip of bushland tenuously connected to the Pyrete and Wombat Range forests, and extending southwards into farmland and open grassland. It is drained by two creeks, the Coimadai and the Djerriwarrh, which are in valleys on either side of a narrow plateau. Permanent water is present in pools in the creeks.

The Long Forest is a generally dry area, being in a rainshadow, with rainfall ranging from 500 to 600 mm./year. Soil type and moisture appear to be major factors determining the distribution of Bull Mallee within the woodland. Mallee occupies the drier sites, on soils with a low rate of water infiltration (Myers *et al.* 1986), and the largest areas are on the plateau between the Coimadai Creek and Long Forest Road.

Much of the bushland along the eastern side of Long Forest Road has been cleared for agricultural purposes. In addition, since the 1970's, three areas have been subdivided for residences. Thus the largest remaining area of undisturbed bushland is west of the road, above and along the Coimadai Creek. Although some sections are administered by the Department of Conservation, Forests and Lands, as the Long Forest Flora Reserve, there is no continuous, protected area covering the major part of the bushland.

Djerriwarrh Creek

Photography Bob Reid.

## Birds recorded in the Long Forest area since 1973

A bird list of 143 species for the Long Forest has been compiled from two sets of observations.

In 1973/4, a list was compiled from a series of observations by members of the Bird Observers' Club, Rosemary and Michael Baker, and others. There are no detailed locations, observation dates, or estimates of abundance for species on this list.

Between September, 1984, and May, 1986, a list was compiled from observations in various areas of the Long Forest (Marilyn Hewish, Rosemary Baker, Lawrie Conole, Michael Baker, David Munday). Localities, observation dates, and abundance estimates were recorded.

Long Forest Road Photograph by Rosemary Baker.

## Why the Long Forest is important for birds

As an island of vegetation unique south of the Divide, the Long Forest mallee is home to a number of bird species more generally associated with the mallee and drier woodlands in the north and north-west of Victoria. Three bird species have been recorded in the Long Forest since 1984, which have not been recorded elsewhere in the region west of Melbourne, except as accidental visitors: Crested Bellbird, Chestnut-rumped Thornbill, and Yellow-rumped Pardalote. The 10' block distribution records for the 'Atlas of Australian Birds' show that their north-western Victorian ranges extend southward to the Bendigo/Castlemaine area, approximately 100 km. from the Long Forest (Blakers *et al,* 1984). Thus it is reasonable to assume that the Long Forest birds are isolated, providing an opportunity for studying the viability, ecology, and evolution of 'island' populations.

Five bird species, which are moderately common in the Long Forest, are uncommon in surrounding areas: the Speckled Warbler, Weebill, Yellow Thornbill, Diamond Firetail, and Zebra Finch. Comparative abundances for the Geelong region, Brisbane Ranges, and You Yangs were obtained from Pescott (1983), and for the southern Wombat State Forest and the Bacchus Marsh region from my own observations. In addition, there is at least one resident Barking Owl in the Long Forest. Pescott (1983) and Conole (1985) regard these birds as rare and sporadic in the Geelong – You Yangs – Brisbane Ranges region, and I know of nowhere else in this district where they are regularly recorded. Thus the Long Forest provides a stronghold for these birds, otherwise rare close to Melbourne.

In the mallee/woodland association of the Long Forest, some bird species, which normally have separate distributions, are brought into contact. Thus, interactions between such birds as Yellow-rumped and Spotted Pardalotes may be studied in these unusual situations, and this may lead to better understanding of their interrelationships.

It has been suggested that the Long Forest is a remnant of a tongue of mallee vegetation, which once extended south from the northern mallee areas. Pescott (1978) has proposed that the sporadic occurrence of mallee birds in the You Yangs could be explained if the Long Forest is used as a corridor by northern birds in their nomadic movements. This would make the Long Forest

Yellow Gum, Grey Box and Moonah. Photograph by Rosemary Baker.

especially important in times of inland drought, when many birds move south. It may also be important as a corridor for local birds in their nomadic and migratory movements in this region.

It is no wonder that researchers, naturalists, and conservationists wish to preserve this unique ecological system, located conveniently close to a major city and its research institutions.

## Long Forest birds in isolated populations

### Crested Bellbird *Oreoica gutturalis*

Single birds have been identified by call in the mallee on the eastern side of Coimadai Creek on 3 occasions (20/10/84, 30/5/85, 5/1/86). This suggests that they are resident in the area but not common. Their scarcity is not surprising. The only available measure of abundance, of a Nullarbor Plain population, is 0.05 birds/ha. (Brooker et al, 1979). The 800 hectares of bush remaining in the Long Forest should all be suitable for the species, as Pizzey (1980) describes their usual habitat as dry inland scrubs and woodlands. If the density is similar and the habitat fully occupied, this gives an approximate total population of 40 birds. While there are problems in transferring abundance measures between different habitats, the scarcity of Long Forest records certainly suggests that the population is small. Their secretive nature, noted especially for this population (Harvey, 1961), would ensure that only observers familiar with their call would notice their presence.

They have been recorded only along and above the Coimadai Creek, in the largest, unbroken area of mallee/woodland in the Long Forest. This may reflect their large territory requirement, a preference for mallee habitat, a preference for areas free from human disturbance, or a combination of these factors.

### Chestnut-rumped Thornbill *Acanthiza uropygialis*

There is a record of a single bird in mallee, 29/5/85, and two records of two birds in Grey Box woodland, 1/1/86 and 5/1/86. This suggests that the birds are resident, and uncommon to rare. They usually favour dry inland scrubs, woodlands, and grasslands (Pizzey, 1980). J. Woinarski has found their density in Bendigo in mallee/-

woodland to be 0.03-0.13 birds/ha. (Blakers et al, 1984). If the habitat in the Long Forest is similar and fully occupied, it would support 20-100 birds, with the scarcity of records favouring the lower end of the range.

Ring of Mallee Stems. Photograph by Rosemary Baker.

Yellow-rumped Pardalote *Pardalotus xanthopygus*

Since the first record on 17/11/84 four different observers have recorded single birds on at least ten occasions, along the eastern side of the Coimadai Creek. They therefore appear to be moderately common and resident. Although they are generally mallee specialists, they have been shown to utilize surrounding woodland in mixed mallee/woodland (Woinarski, 1984). However, all the Long Forest sightings but one have occurred in mallee, which indicates a definite preference. J. Woinarski has found the density in mallee near Bendigo to be 0.05-0.30 birds/ha. (Blakers et al, 1984). If the mallee habitat at the Long Forest is similar and fully occupied, this gives a population size of 20-100 birds; if other woodland is used as well as mallee, the population size may be considerably higher.

There are records of Yellow-rumped Pardalotes occurring as vagrants in the You Yangs, Melbourne suburbs, and Airey's Inlet (Pizzey, 1980). It is possible that these birds originated from the Long Forest, which has the closest known resident population.

The similar Spotted Pardalote *Pardalotus punctatus* also occurs in the Long Forest. Australian distribution studies have shown that Yellow-rumped Pardalotes are confined to mallee, while Spotted Pardalotes occupy eucalypt woodland and forest, and their ranges do not generally overlap (Blakers et al, 1984). However, a study in the Bendigo Whipstick has shown that overlap and interbreeding may occur where there are islands of mallee within woodland. Contact of Spotted and Yellow-rumped Pardalotes allowed comparisons of foraging, habitat preferences, and territorial and breeding behavior (Woinarski, 1984). As a result of this study, the separate status of the two species has been questioned. The Long Forest offers another opportunity to study this unusual phenomenon.

## Bird species which are more common in the Long Forest than in surrounding areas

### Barking Owl *Ninox connivens*

All of the Barking Owl records from Long Forest are based on records of barking, or of the distinctive, screaming call. David Whelan heard a Barking Owl on several occasions during April, 1984, and April, 1985, along the western escarpment of the Djerriwarrh Creek in partly cleared land. Both the barking and screaming calls were heard. In September 1985, nearby residents said that the owl had been present for a few years, and often called from a patch of trees on their property. However, they had not heard the owl since they had built a fence through this patch.

Rosemary Baker has heard calls regularly since November, 1985, along the western slope of the Coimadai Creek in mixed mallee/Red Box woodland. This bird is, so far as is known, still present.

Rosemary and Michael Baker remember hearing "blood-curdling screams in the night", regularly on their property approximately 15 years ago, in mallee/woodland along the eastern side of Coimadai Creek. None have been heard there recently.

These birds require very large territories, from 30 ha. upwards, for roosting and breeding (Schodde & Mason, 1980), and they may range further for feeding. They seem to be susceptible to disturbance by human activity. Some territories, which were occupied in the past, are now deserted, suggesting that they have suffered from fragmentation of their habitat and increasing human disturbance. It is suggestive that the only recent records are from an area of unbroken bush which is seldom visited.

### Speckled Warbler *Sericornis sagittatus*

I have found these birds, singly and in pairs, regularly in all kinds of woodland (Bull Mallee, Red Box, and Grey Box). They favour open areas with sparse understorey, as would be expected for a ground-feeding bird. They are commonly associated with feeding flocks of Buff-rumped Thornbills. They appear unexpectedly before a quiet observer, who has been intent on watching the Thornbills, and will approach quite closely if not disturbed by a sudden movement. The birds seem to be shy, as I have only recorded them when either alone or with one other person. This secretiveness and quietness leads me to believe that they are more common than even the regular records suggest.

### Weebill *Smicrornis brevirostris*

Weebills are common in all kinds of woodland in the Long Forest, from the densest mallee to scattered trees in the agricultural and residential areas. The birds usually occur in small parties, feeding in the canopy foliage.

### Yellow Thornbill *Acanthiza nana*

Yellow Thornbills are common in small parties. They have been seen feeding in the foliage in all kinds of woodland, but they particularly favour the larger Moonah bushes.

### Diamond Firetail *Emblema guttata*

Diamond Firetails favour open areas with scattered trees. They are moderately common in the Moonah block of the reserve, in open Grey Box woodland with hardly any undergrowth. Several birds may be seen at once. They have also been recorded singly or in pairs, in grassy areas with scattered trees, in residential areas, in regenerating bushland, and along the roadsides.

### Zebra Finch *Poephila guttata*

Zebra Finches are common in cleared areas, with flocks frequently being seen along grassy roadside verges and perched on fences along the southern section of Long Forest Road and west of Coimadai Creek. I have found Zebra Finches to be common in the grasslands in the Bacchus Marsh area, and I have seen flocks near the town outskirts, above the Werribee Gorge, and along the Lerderderg River. Thus the population in the Long Forest may represent part of a more widespread occurrence, not, however, reaching as far as the Brisbane Ranges or the You Yangs, where the birds are rare (Pescott, 1983).

## Birds Recorded in 1973/4, but not after 1984

The status of birds not seen since 1973/4 is uncertain. No indications of abundance are given in the 1973/4 list, so that some records may represent rare birds or those occurring sporadically. During observations for the 1984-1986 list, these may have been missed, or overlooked if the calls were not familiar to the observer. Nevertheless, for several species the lack of recent records is worthy of comment.

### White-browed Babbler *Pomatostomus superciliosus*

The 10' block records for the 'Atlas of Australian Birds' (Blakers *et al*, 1984) show this species' range extending southwards to the Bendigo/Castlemaine area. The birds were present in the Brisbane Ranges until 1908 and in the You Yangs until the 1930's, but are now extinct in these areas (Pescott, 1983). The recent lack of sightings of these unafraid and noisy birds seems to indicate that they are extinct in the Long Forest as well, and the 1973/4 records may represent their latest occurrence close to Melbourne as their range was contracting.

### Southern Whiteface *Aphelocephala leucopsis*

These birds are more commonly associated with the northern areas of Victoria, and Pescott (1983) lists them as rare in the You Yangs and Brisbane Ranges. Although listed for the Long Forest in 1973/4, they may have been a rarity even then. They would be expected to favour grassy areas, which were seldom visited in 1984-6, and a determined search in the right habitat may yet reveal them.

### Black-chinned Honeyeater *Melithreptus gularis*

Pescott (1983) lists this as the rarest resident species of honeyeater close to Melbourne, and the birds must be rare in the Long Forest, if present at all. Nevertheless, as they favour Yellow Gum woodland in the You Yangs, Bannockburn and Bendigo (Pescott, 1983), they may yet be found again in the Long Forest, where Yellow Gum is common.

### White's Thrush *Zoothera dauma,* Pink Robin *Petroica rodinogaster,* Rufous Fantail *Rhipidura rufifrons*

Although these birds were listed in 1973/4, they were probably never more than brief visitors. The woodland at Long Forest would be too open for them, as they favour denser forests. However, they are known to visit more open areas during autumn-winter dispersal (White's Thrush, Pink Robin) or migration (Rufous Fantail) (Pizzey, 1980), and sporadic visitors may be easily missed. Pied Currawongs *Strepera graculina,* which also disperse in autumn-winter, have been sighted three times since 1984, on 31/8/85, 8/5/86 and 22/5/86, at the times of spring and autumn movements.

### Waterbirds

24 species listed for 1973/4 are birds normally associated with water. Several of them have been recorded since 1984, either by the creeks, by farm dams, or flying over. It seems likely that the bulk of the 1973/4 waterbird list was compiled at Lake Merrimu just to the north, as it corresponds closely to a species list made from my own observations along the lakeshore in nine visits in 1982. The waterbirds listed are common in this region, and their status is unlikely to have changed since 1973/4.

## Conservation; conflicts and problems

### 1. Small area of habitat

For birds needing large territories, the present extent of 800 ha. of bush can hold only a small population. The Crested Bellbird population is estimated at 40 birds, and must be self-supporting, as it is unlikely to be replenished from outside. Such small, isolated populations are susceptible to disasters such as wildfire, and are also in danger from loss of genetic variability, leading to a slow decline in fitness and viability.

### 2. Fragmented habitat

Because of clearing for agriculture and residential development, much of the remaining woodland habitat is fragmented. Some birds have large territory requirements (Crested Bellbird, Barking Owl), so that in parts of the Long Forest there would be no adequate unbroken area of habitat. For birds with smaller territories, habitat fragmentation can lead to separation of populations. They are more isolated and less likely to mix during breeding, so that the genetic problems arising from small population sizes are exacerbated.

Small areas of woodland are more exposed to penetration by predators, such as domestic cats and dogs, foxes, and birds of prey. On private land, they are also more susceptible to grazing by livestock. A study in Gippsland has shown that forest patches of less than 10 ha. may be seriously degraded by grazing, so that the understorey is destroyed. As a consequence, they contain low populations of forest birds, and are invaded by farmland birds, including introduced species (Loyn, 1985).

### 3. Pressure for further subdivision and clearing

Commercial interests would be served by further subdivision, but, as the value of the area has become better understood, pressures in this direction have been reduced. However, there is still pressure from existing landholders for clearing for buildings, tracks, and fire risk reduction.

Many landholders realize that clearing of trees is not advisable as it would reduce and fragment the bushland still further. However, there is still widespread clearing of undergrowth, which is essential for many birds for either feeding, roosting or nesting. Thus, residential areas become bird deserts. This may not be immediately apparent. Foliage-feeding birds may visit, but, if they require undergrowth for roosting or nesting, they must return to uncleared areas.

Without undergrowth, erosion occurs, so that regeneration is less likely, and weeds become established. Human habitation and weed infestation favour the introduction and establishment of introduced birds, which compete successfully with native birds for food and nest sites. Starlings, in particular, are notorious for ousting native birds from nesting hollows.

Introduced birds are not a problem in residential areas only. On the property of Michael and Rosemary Baker on the eastern side of Coimadai Creek, Blackbirds were first seen in dense mallee by the house two years ago. Since then, they have become occasional visitors. The house is approximately half a kilometre from the nearest residential or cleared area, and it seems likely that the birds are penetrating along the cleared strip under the power lines from Canopus Circuit, or possibly along the track from Long Forest Road. European Goldfinches are also seen occasionally in denser woodland. Blackbirds, House Sparrows, and Starlings have been seen along the two creeks, where the grassy, open forest habitat is suitable for them. As Blackbirds are most common in the Djerriwarrh Creek behind the Sundew Avenue subdivision, it seems likely that they are using residential areas, cleared areas, and tracks as corridors to the creeks. From the creeks, they have access to the edge of all the larger woodland areas in the Long Forest.

Spotted Turtle-Doves and Tree Sparrows were not on the 1973/4 bird list, but are now present in residential areas. They are an indication of a continuing invasion of introduced birds, probably from Bacchus Marsh or Melton, where the two species are very common.

## 4. Disturbance

Increasing resident numbers, building, traffic and trail bikes, horse-riding, shooting, and predation by domestic pets, have placed increased pressure on birds in the area. Little is known about the susceptibility of many birds to disturbance. Shy and secretive birds, such as Speckled Warblers and Crested Bellbirds, may need a larger bush area than anticipated to establish territories. They may not use the woodland edges close to houses, tracks, and roads. Fence-building through the roosting area of a Barking Owl led to desertion of a territory that had been occupied for years. In addition, two Wedge-tailed Eagle nests along the Djerriwarrh Creek have not been used since 4-5 years ago, when houses were built nearby in the Sundew Avenue subdivision. It has been suggested that Wedge-tailed Eagles are susceptible to disturbance, as, near Canberra, they nest in locations isolated from roads, houses, and human activity (Leopold and Wolfe, 1970).

Domestic cats and dogs are a serious problem, not only in the residential areas, but also in the bushland and reserves, where they are often seen. Birds which feed, roost, or nest on the ground or in low bushes, are especially vulnerable. This includes all of the species in isolated populations: Crested Bellbirds, Chestnut-rumped Thornbills, and Yellow-rumped Pardalotes.

### 5. Most of habitat on private land

A large proportion of the remaining bushland, including the largest areas of mallee, is on privately-owned land. Therefore, controls on land use in the most important areas are inadequate.

There is some resistance from residents to convenants and controls on the use of their land, as an infringement of landowners' rights. Those controls which do exist are weakened by lack of enforcement.

### 6. Division of responsibilities, lack of planning and land use controls

Different sections of the Long Forest are under the control of the Department of Conservation, Forests and Lands, three local municipalities, and the Rural Water Commission. Other interested parties are the landholders, Ministry for Planning and Environment, Victorian National Parks Association, Victorian Conservation Trust, Country Fire Authority, researchers, naturalists, and conservationists. It is therefore no wonder that there are no coherent planning and land use controls covering the whole Long Forest area.

## Management options

Although the conflicts and problems described above are serious, several management options are available. The greatest possible protection would be ideally provided by the purchase of more land to add to the present reserve. The recent purchase of three blocks by the Department of Conservation, Forests and Lands was a welcome step in this direction. However, the consolidation of the major areas of bushland into the reserve is likely to be slow, proceeding only as fast as land becomes available for purchase.

In the interim, it is vital to institute coherent planning and land use controls over both public and private land. The priority is to prevent further subdivision and clearing. The present regulations and covenants should be enforced. On the positive side, there should be a programme for informing landholders about the uniqueness of the area to gain co-operation, and incentives for replanting and allowing natural regeneration, to extend the bushland and provide corridors for wildlife.

The fencing of smaller areas of bushland would prevent grazing by livestock. If the understorey is intact, even small areas of woodland are of value to birds (Loyn, 1985). There is also a need for research and population monitoring of birds, so that endangering processes can be identified and prevented.

In these ways, it should be possible at least to ensure that there is no further deterioration in the extent or quality of the bushland, and that this unique ecological system receives the protection it merits.

(References will be published with Part 2.)

Marilyn Hewish, 74 Wellington St, Bacchus Marsh 3340.

# Eggs and Hatching of the Lizard *Leiolopisma guichenoti* (Scincidae)

D.F. King

During a walk along the forest track immediately behind the Camping Reserve at Kennett River, on 9 March 1986, a small excavation was observed on the edge of the track. Closer examination revealed that a number of eggs had been excavated from a hollow under the track surface, while a considerable number remained in the hollow. The eggs were obviously those of a lizard, judging by appearance and size. Typical scats lying close by indicated that the predator was probably a fox.

Most of the eggs that had been disturbed had been damaged sufficiently to kill the embryo, or possibly they had already hatched. A few, however, appeared still to be viable. Several of both were collected with the object of attempting identification of the lizard. The earth was replaced over the hole, to cover the remaining large number of eggs. The total number of eggs was estimated to be about sixty.

On arrival back at our campsite, in a matter of 10 to 15 minutes, it was discovered that two eggs had hatched, resulting in two lively young skinks some 25 mm in overall length. In an attempt to secure the hatching of further eggs, they were placed in a large transparent plastic jar of about two litres capacity. The eggs were placed on newspaper that had been dampened but not allowed to have excess moisture. Newspaper was chosen because newsprint ink has antiseptic qualities that might prevent any possible bacterial and fungal growth. This container was kept at ambient room temperature which at that time would have varied between 20° and 24°C. Direct sunlight was prevented from striking the eggs; they received diffused daylight and a proportion of fluorescent light.

Eventually over a period of one week following collection, six more eggs hatched producing perfectly healthy skinks. Thus eight hatchlings were obtained from the 20 or so eggs collected. The exact number of eggs was difficult to determine because several had been badly mutilated by the predator, causing them to become congealed masses.

The hatchlings were readily identified, because their colouring and markings were identical to the adult *L guichenoti*, as were the form and configuration of scales on the head (Cogger, 1975).

Soon after hatching each skink was released into a suitable habitat of crevices in concrete that contained communities of ants which would provide a source of food.

The eggs were slightly variable in size, generally ovoid, with the long axis between eight and ten millimetres. The shell is off white with no specific markings, and of a soft parchment consistency. A split occurs in the shell, allowing the hatchling to emerge head first from the egg.

## REFERENCE

Cogger, H.G. (1975) *Reptiles and Amphibians of Australia*, Reed, Sydney.

Dave King, 8 Traum St., Portarlington 3226.

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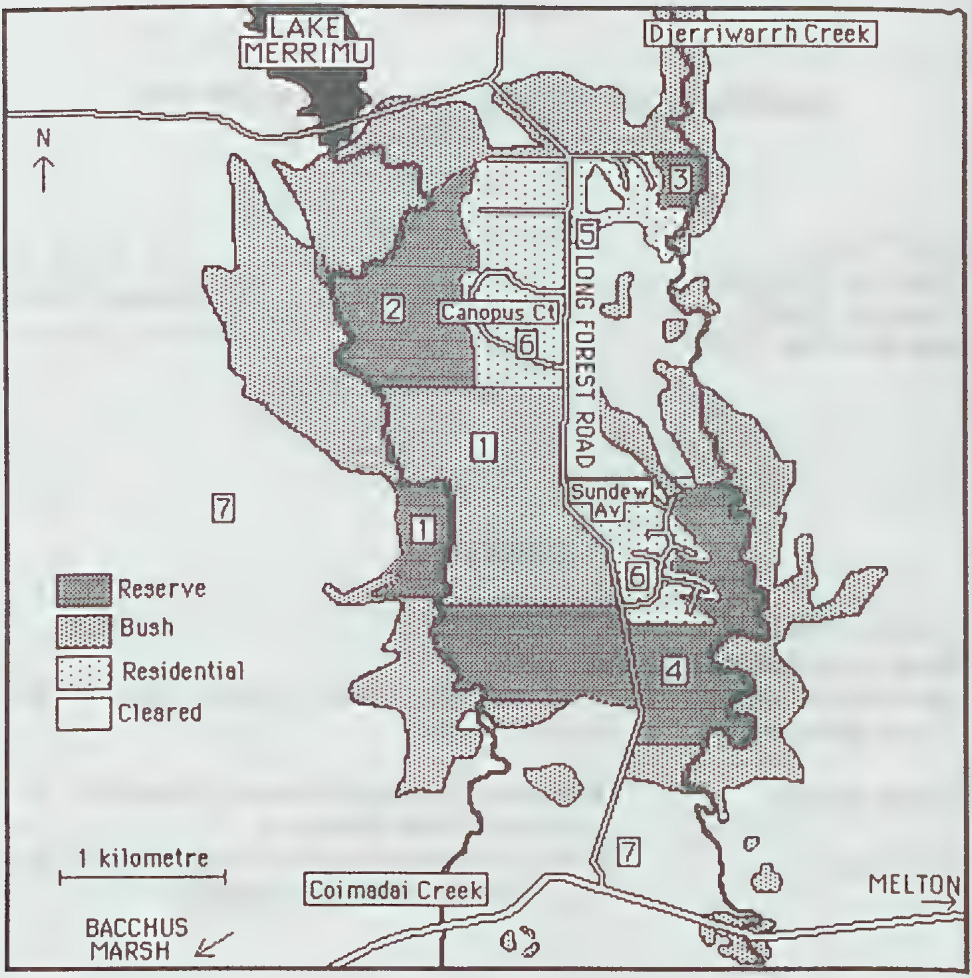
## The Long Forest



**Areas visited**

1. Baker property - Pyrites section
2. Coimadai section of reserve
3. Moonah section of reserve
4. Djerriwarrh section of reserve
5. Long Forest Road
6. Residential - Sundew Ave., Canopus Circuit.
7. Grassland - W side of Coimadai Creek, S end of Long Forest Road.

# Birds of the Long Forest: part 2
# annotated list

**Marilyn Hewish, Rosemary Baker, Michael Baker, and David Munday**

A bird list for the Long Forest has been compiled from two sets of observations. 143 species have been recorded thus far.

In 1973/4 a list of 130 species was compiled from a series of observations by members of the Bird Observers Club, Rosemary and Michael Baker, and others. There are no detailed locations, observation dates, or estimates of abundance on this list.

A recent list has been compiled from observations made between September 2nd, 1984, and May 22nd, 1986. Bird observations were recorded on 74 occasions during Rolling Bird Surveys (Cullen, 1980) and walks in various areas of the Long Forest by Marilyn Hewish (35 lists), Rosemary Baker (34 lists), Lawrie Conole (3 lists), and Michael Baker (2 lists). Locations, observation dates, and abundances were noted for each species. This information has been supplemented by casual observations around the Baker property, on the eastern side of the Coimadai Creek (Rosemary and Michael Baker), in the sections of the Flora Reserve (David Munday, Park Ranger), and in other areas (all authors).

Since 1984, 103 species on the 1973/4 list have been confirmed. In addition, 13 species have been added: Peregrine Falcon *Falco peregrinus*, Spotted Turtle-Dove *Streptopelia chinensis*, Long-billed Corella *Cacatua tenuirostris*, Musk Lorikeet *Glossopsitta concinna*, Fork-tailed Swift *Apus pacificus*, Satin Flycatcher *Myiagra cyanoleuca*, Spotted Quail-thrush *Cinclosoma punctatum*, Clamorous Reed-Warbler *Acrocephalus stentoreus*, Rufous Songlark *Cinclorhamphus mathewsi*, Brown Songlark *Cinclorhamphus cruralis*, Chestnut-rumped Thornbill *Acanthiza uropygialis*, Yellow-rumped Pardalote *Pardalotus xanthopygus*, and Tree Sparrow *Passer montanus*.

## Areas visited

The areas visited are shown on the map of the Long Forest.

1. The property of Michael and Rosemary Baker, referred to as the Pyrites section, between Long Forest Road and the Coimadai Creek. This includes an area to the west of the creek, which belonged to the Baker family at the beginning of the study, but has since been purchased as an addition to the Flora Reserve. Bird lists were made in the Pyrites section on 53 occasions. It was visited most frequently as it contains one of the largest areas of undisturbed mallee, and one of the objectives of the study was to determine the occurrence and abundance of mallee or dry country birds.

2. The Coimadai (NW) section of the Reserve, between Coimadai Creek and the residential areas of Canopus Circuit, Bull Mallee Road, and Symington Road. 5 bird lists.

3. The Moonah (NE) section of the Reserve, abutting the Djerriwarrh Creek, at the end of Moonah Drive. 3 bird lists.

4. The Djerriwarrh (SE) section of the Reserve, between Long Forest Road and the Djerriwarrh Creek. The strip of Reserve between the creek and the residential area around Sundew Avenue was not visited. 3 bird lists.

5. Long Forest Road. This includes the vegetation along the roadside verges. It has been included as a separate category as several bird species prefer or are more easily seen along roadsides. 2 bird lists.

6. Residential. Observations were made around residences in Canopus Circuit, and in the area of Sundew Avenue and its side roads. 2 bird lists.

7. Grassland. Observations in cleared, open grassland were made at the southern end of Long Forest Road, and along the western side of the Coimadai Creek, where Bence's Road and tracks run alongside and into the woodland edges. 6 bird lists.

## Vegetation

Information on vegetation was obtained from Myers *et al* (1986) and from Rosemary Baker. Scientific names of plants are given in the Appendix.

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### 1. Pyrites section (Baker property)

The vegetation consists mainly of mixed mallee/eucalypt woodland. On the plateau Bull Mallee is predominant, with Grey Box and Red Box increasing on the slopes down to the creek. Yellow Gum and Cherry Ballart are scattered throughout, and Yellow Box is rare. Bushy understorey is present in more open areas along tracks and woodland edges, but is generally sparse in the pure mallee stands. It consists mainly of Fragrant Saltbush, Gold-dust Wattle, Shiny Cassinia, Golden Wattle, and, in the north, Varnish Wattle. Moonah forms both understorey and canopy, and is scattered throughout.

An area (8 ha) of regenerating, open woodland on the eastern side of the property consists mainly of Grey Box to the north and Bull Mallee in the south, with Golden Wattle, Gold-dust Wattle, Eutaxia, and Turkey-bush, and a grassy stratum of Variable Spear-grass and Wallaby-grasses.

Along the Coimadai Creek flats there is a grassy, open forest of Blue Box, Grey Box, Manna Gum, and Black Wattle. The stratum consists mainly of Sweet Bursaria, Golden Wattle, Gold-dust Wattle, Wirilda, Prickly Moses, and Wedge-leaf Hop-bush. Grasses are mixed Tussock Grass, Spear-grasses, Wallaby-grasses, and Kangaroo Grass. In the creek bed there are River Bottlebrush, Woolly Tea-tree, Bulrush, Spiny Rush, and Finger Rush.

### 2. Coimadai section of Reserve.

The vegetation of the plateau, creek slopes, and creek flats is similar to that in the Pyrites section, but includes Long-leaf Box and Red Stringybark.

### 3. Moonah section of Reserve.

Grey Box is predominant in this woodland, with some Red Box, and Cherry Ballart is present. A patchy undergrowth is formed by Golden Wattle, Gold-dust Wattle, Varnish Wattle, Fragrant Saltbush, Turkey-bush, and Shiny Cassinia.

### 4. Djerriwarrh section of Reserve.

The vegetation is mainly Grey Box, with some Moonah, and patches of Bull Mallee. There is not much undergrowth in the woodland, except near the road where there is Fragrant Saltbush, Gold-dust Wattle, and sparse Golden Wattle. The Djerriwarrh Creek vegetation is similar to that in the Coimadai Creek; predominantly Blue Box, Black Wattle, River Bottlebrush, and Woolly Tea-tree, with some fine, large Red Box trees.

### 5. Long Forest Road.

Both road verges are treed. The western side has heavier bushy growth than in other areas of woodland, with Moonah, Fragrant Saltbush, Shiny Cassinia, Turkey-bush, and Gold-dust Wattle. Along the northern part of the road there is Sweet Bursaria, Varnish Wattle, and Drooping Cassinia. Next to cleared areas, the roadside verges are predominantly grassy with Grey Box.

### 6. Residential.

The vegetation in Canopus Circuit is similar to that in the adjacent Coimadai block of the Reserve. However, in the vicinity of residences there has been clearing, so that the woodland and undergrowth are patchy.

The vegetation in the Sundew Avenue residential area is open grassland with scattered trees, and gardens with native and exotic plants around houses. There are parts of the public open space (along roadsides and near dams) where Bull Mallee and Grey Box are regenerating. This section is bordered on the east and south by the Grey Box woodland of the Djerriwarrh section of the Reserve.

### 7. Grassland.

The cleared areas along the southern part of Long Forest Road and the western side of the Coimadai Creek are open grasslands of Kangaroo Grass, Wallaby-grasses, and Spear-grasses, with Gold-dust Wattle and some dry-climate, ground cover species regenerating in places.

## Bird List

For each bird species on the 1984-6 list, the recording frequency is expressed as the number of times it was recorded out of the 74 bird lists, and as a percentage. This is a reliable indicator of abundance for birds in the woodlands, which were most frequently visited. However, birds favouring cleared and residential areas and nocturnal birds are likely to be under-represented in the 74 lists. Where it is available, additional abundance information from casual observations is supplied in the text for these species.

Locations of sightings for each species are listed. Locality information, additional to that obtained from the 74 bird lists, was compiled from casual observations. This is particularly important for birds favouring seldom-visited areas. Locality codes are as follows: Pyrites = Baker property (area 1 on the map); Coimadai = Coimadai section of Reserve (area 2); Moonah = Moonah section of Reserve (area 3); Djerriwarrh = Djerriwarrh section of Reserve (area 4); Long Forest Road (area 5); residential = Canopus Circuit, Sundew Avenue (area 6); grassland = South end of Long Forest Road, West side of Coimadai Creek (area 7).

Introduced species are indicated with an asterisk (*).

Hoary-headed Grebe *Poliocephalus poliocephalus*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Australasian Grebe *Tachybaptus novaehollandiae*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Australian Pelican *Pelecanus conspicillatus*
2/74, 3%. Pyrites, Coimadai, residential, grassland.
Uncommon, flying over. Usually in small flocks, up to four birds, but groups of up to 30 have been seen. Probably flying between Lake Merrimu and Melton Reservoir.

Great Cormorant *Phalacrocorax carbo*
1/74, 1%. Coimadai, Long Forest Rd.
Uncommon. Single birds flying over, or perched by pools along Coimadai Creek.

Little Black Cormorant *Phalacrocorax sulcirostris*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Little Pied Cormorant *Phalacrocorax melanoleucos*
1/74, 1%. Pyrites, Coimadai.
Occasional. Single birds by pools along the Coimadai Creek.

Pacific Heron *Ardea pacifica*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu or farm dams. Not recorded since 1984.

White-faced Heron *Ardea novaehollandiae*
2/74, 3%. Pyrites, Coimadai, Long Forest Rd.
Uncommon. Single birds by pools along Coimadai Creek, by farm dams or flying over. One bird perched on a house roof on the western side of Coimadai Creek, edge of woodland.

Great Egret *Egretta alba*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Sacred Ibis *Threskiornis aethiopica*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu area. Not recorded since 1984.

Straw-necked Ibis *Threskiornis spinicollis*
1/74, 1%. Pyrites, Coimadai, grassland.
Uncommon. Flocks of up to 30 flying over. Probably moving between fields around Toolern Vale and irrigation areas of Bacchus Marsh. Occasionally flocks of up to 20, feeding in grassland, southern end of Long Forest Rd., western side of Coimadai Creek.

Royal Spoonbill *Platalea regia*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Yellow-billed Spoonbill *Platalea flavipes*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu or farm dams. Not recorded since 1984.

Black Swan *Cygnus atratus*
0/74, 0%. Pyrites.
Uncommon. Two sightings in Spring 1984, four birds and two birds flying over Pyrites section. Probably moving to or from Lake Merrimu.

Pacific Black Duck *Anas superciliosa*
3/74, 4%. Pyrites, Coimadai, Djerriwarrh.
Occasional. Single birds or pairs in pools along the Coimadai and Djerriwarrh Creeks. In 1985/6 breeding season, an adult and seven ducklings seen in the Coimadai Creek.

Grey Teal *Anas gibberifrons*
0/74, 0%. Long Forest Rd.
Uncommon. A flock of about 30, present for some time at a farm dam near the northern end of Long Forest Rd.

Chestnut Teal *Anas castanea*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Hardhead *Aythya australis*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Maned Duck *Chenonetta jubata*
0/74, 0%. Coimadai.
Occasional. Flocks of up to 20 or 30 by pools in Coimadai Creek.

Black-shouldered Kite *Elanus notatus*
1/74, 1%. Residential, grassland.
Uncommon. Single birds, hunting over open grassland. Mostly along west side of Coimadai Creek.

Whistling Kite *Haliastur sphenurus*
2/74, 3%. Pyrites, Coimadai.
Uncommon. Sightings of single birds, possibly same one, flying over Coimadai Creek, on 28/9/85 and 5/10/85.

Brown Goshawk *Accipiter fasciatus*
3/74, 4%. Pyrites, grassland.
Uncommon. Single birds soaring over grassland or woodland, east side of Coimadai Creek. Sightings over Pyrites section on 7/9/85 and 28/9/85 may have been of the same bird.

Wedge-tailed Eagle *Aquila audax*
5/74, 7%. Pyrites, Coimadai, Djerriwarrh, grassland.
Two pairs. One pair has three nests on the western slopes of the Coimadai Creek; one in a Manna Gum in the Pyrites section, and the other two in a Yellow Gum and a Yellow Box opposite the Coimadai block of the reserve. This pair nested in the Manna Gum in the 1983 breeding season. The Yellow Gum nest was freshly lined with eucalyptus leaves in the 1985 season, but no eggs were laid (Hewish, 1985). This pair hunts in grassland to the NW of their nest sites.

The other pair had two nests along the Djerriwarrh Creek until 4-5 years ago. The nests have not been used since houses were built nearby, although the birds are still occasionally seen in the area. This pair's territory extends SE of their old nest sites.

Near Canberra, Leopold and Wolfe (1970) found that nests of adjacent pairs were spaced 5-6 km apart. When the Djerriwarrh nests were in use, the distance between the Long Forest pairs was 2-4 km, which may reflect the scarcity of suitable nesting habitat in this region.

Little Eagle *Hieraaetus morphnoides*
3/74, 4%. Pyrites.
Uncommon. Single birds, flying over woodland, eastern side of Coimadai Creek. Sightings on 22/10/84 and 16/11/84 over the Pyrites section may have been of the same bird.

Marsh Harrier *Circus aeruginosus*
0/74, 0%.
On 1973/4 list, probably from wetter areas around Lake Merrimu. Not recorded since 1984.

Black Falcon *Falco subniger*
1/74, 1%. Grassland.
Rare. Single bird seen hunting over open grassland, west side of Coimadai Creek, 8/3/86.

Peregrine Falcon *Falco peregrinus*
0/74, 0%. Coimadai, Djerriwarrh, grassland.
Single birds seen flying over woodland or grassland at least 6 times. Seen harrying honeyeaters at north end of Coimadai Creek.

Australian Hobby *Falco longipennis*
1/74, 1%. Long Forest Rd.
Rare. Single bird perched on telegraph line, north end of Long Forest Rd., in area of open woodland, 21/8/85.

Brown Falcon *Falco berigora*
3/74, 4%. Pyrites, residential, grassland.
Occasional. Single birds hunting over grassland, or perched on fence posts, telegraph lines.

Australian Kestrel *Falco cenchroides*
1/74, 1%. Coimadai, Long Forest Rd., grassland.
Uncommon. Single birds, or occasionally pairs, perched on telegraph lines along roadsides, or hunting over grassland.

Stubble Quail *Coturnix novaezelandiae*
1/74, 1%. Pyrites, grassland.
Moderately common. Flushed regularly at night from grassy sides of tracks, west side of Coimadai Creek. Occasionally, single birds in regenerating area of grassy, Grey Box woodland in Pyrites section.

Painted Button-quail *Turnix varia*
1/74, 1%. Pyrites, Coimadai.
Uncommon. One to three birds in woodland along east side of Coimadai Creek. Occasionally seen around houses in the Pyrites section.

Dusky Moorhen *Gallinula tenebrosa*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Purple Swamphen *Porphyrio porphyrio*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Eurasian Coot *Fulica atra*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Masked Lapwing *Vanellus miles*
7/74, 9%. Long Forest Rd., residential, grassland.
Moderately common. Singly or in pairs, in grassy areas. By dams near Long Forest Rd. and on west side of Coimadai Creek, gardens and roadsides in residential areas, and regenerating Grey Box woodland with grassy understorey in Pyrites section. Often heard calling at night.

Banded Lapwing *Vanellus tricolor*
1/74, 1%. Grassland.
Rare. One party of four birds, in a bare field by a dam, west side of Coimadai Creek, 16/2/86.

Black-fronted Plover *Charadrius melanops*
0/74, 0%.
On 1973/4 list, probably from Lake Merrimu. Not recorded since 1984.

Silver Gull *Larus novaehollandiae*
1/74, 1%. Coimadai.
Uncommon. Flying over in groups of one to three, probably moving to or from Lake Merrimu.

Spotted Turtle-Dove *Streptopelia chinensis* *
2/74, 3%. Long Forest Rd., residential.
Occasional. Single birds on telegraph lines, cleared area at northern end of Long Forest Rd., and beside Sundew Ave.. Not on 1973/4 list. Probably has increased in response to increased numbers of residences.

Common Bronzewing *Phaps chalcoptera*
13/74, 18%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential.
Moderately common in all kinds of woodland, especially in the Djerriwarrh block. Usually seen feeding along the edges of tracks and roads , in small parties. A resident living adjacent to the Djerriwarrh block has flocks of 15-20 coming to the garden to be fed on seed mixture. A nest with two chicks was found in a Grey Box in the Djerriwarrh block, 15/9/85 (Hewish, 1985).

Galah *Cacatua roseicapilla*
15/74, 20%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential.
Moderately common in grassland with scattered trees. Especially along the two creeks, along grassy roadside verges, and in residential areas. Not in woodland areas, rarely even flying over. In flocks of up to 30. Pair nested in a hollow in a dead Manna Gum by the Coimadai Creek, 1985/6 season.

Long-billed Corella *Cacatua tenuirostris*
1/74, 1%. Long Forest Rd., residential.
Uncommon. Single bird in a flock of Galahs feeding in grass beside Sundew Ave., 6/12/85. Occasional birds in flocks of Sulphur-crested Cockatoos flying over northern end of Long Forest Rd. Not on 1973/4 list. May be extending its range in the Geelong and Ballarat regions (Pescott, 1983; Thomas and Wheeler, 1983).

Sulphur-crested Cockatoo *Cacatua galerita*
32/74, 43%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential, grassland.
Common in open woodland, grassland with or without trees, residential areas, feeding in flocks of up to 50. Less common in denser woodland, although often heard or seen flying over. Flocks seen roosting in larger trees in three areas along the Djerriwarrh and Coimadai Creek.

Musk Lorikeet *Glossopsitta concinna*
0/74, 0%. Coimadai, Djerriwarrh.
Uncommon. Flocks of 10-20 occasionally fly over the Coimadai block. Small flock feeding in a flowering Grey Box, Djerriwarrh block, autumn 1985.

Swift Parrot *Lathamus discolor*
0/74 0%.
On 1973/4 list. Not seen since 1984. Irregular visitor to Geelong region (Pescott, 1983).

Crimson Rosella *Platycercus elegans*
35/74, 47%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common all areas of denser woodland. Less common lightly-timbered areas. Usually in flocks of 5-10. Green, juvenile birds regularly seen. Pair nested in a hollow in a Blue Box on Coimadai Creek, 1984/5.

Eastern Rosella *Platycercus eximius*
9/74, 12%. Pyrites, Moonah, Long Forest Rd., residential.
Moderately common. Single birds or pairs in lightly-wooded and partly cleared areas, including residential areas. Feeds in grass along roadside verges.

Red-rumped Parrot *Psephotus haematonotus*
2/74, 3%. Long Forest Rd.
Occasional. Flocks of up to ten feeding in roadside grass, northern end of Long Forest Rd..

Pallid Cuckoo *Cuculus pallidus*
9/74, 12%. Pyrites, Coimadai, Long Forest Rd., residential.
Spring/summer visitor, records from September to December. Common in open woodland, along the two creeks, roadsides, and in residential areas. Moderately common in the denser areas of woodland. Usually single birds. Very vocal in spring.

Fan-tailed Cuckoo *Cuculus pyrrhophanus*
24/74, 32%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential.
Spring visitor, records from late August to November. Common in all areas of woodland, especially along the two creeks. Prefers slightly denser woodland than Pallid Cuckoo, and less common in residential areas. Usually single birds. Very vocal in spring.

Black-eared Cuckoo *Chrysococcyx osculans*
1/74, 1%. Moonah.
Rare. Single record of one bird in Moonah block, 8/3/86. Probably on northern migration.

Horsfield's Bronze-Cuckoo *Chrysococcyx basalis*
23/74, 31%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd.
Spring/summer visitor, records from early September to early December. Common all areas of woodland. Single birds, vocal in spring.

Shining Bronze-Cuckoo *Chrysococcyx lucidus*
28/74, 38%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential.
Spring/summer visitor, records from late August to early January. Common all areas of woodland. Single birds, vocal in spring.

Powerful Owl *Ninox strenua*
0/74, 0%.
On 1973/4 list. Not recorded since 1984.

Southern Boobook *Ninox novaeseelandiae*
2/74, 3%. Pyrites, Coimadai, Moonah, residential.
Moderately common and widespread in woodland. Heard calling at night in the Pyrites section and in a gully at the end of Sundew Ave. In the Coimadai block, a single bird seen sitting on a branch in day light. One bird roosts regularly in a hollow tree in the Moonah block.

Barking Owl *Ninox connivens*
0/74, 0%. Pyrites.
Rare. Records based on barking or screaming calls. For a few years, at least one bird favoured a patch of trees in a partly cleared area on the western slope of the Djerriwarrh Creek. Last heard April, 1985. It was not recorded after a fence was built through these trees. Calls have been heard regularly in mallee/woodland in a gully on the western side of the Coimadai Creek since November, 1985. It is not known whether these records represent single birds or pairs. Seems to be susceptible to disturbance.

Barn Owl *Tyto alba*
0/74, 0%. Coimadai, grassland.
More common than lack of records suggests. At night, perched on fence posts or flying over open grassland, southern end of Long Forest Rd. and western side of Coimadai Creek. Also in very open, grassy, Grey Box woodland along Coimadai Creek. Single birds.

Tawny Frogmouth *Podargus strigoides*
0/74, 0%. Pyrites.
Uncommon. Single birds occasionally heard calling at night in woodland in the Pyrites section, western side of Coimadai Creek.

Australian Owlet-nightjar *Aegotheles cristatus*
3/74, 4%. Pyrites, Coimadai.
Moderately common in mallee/Red Box woodland along eastern side of Coimadai Creek. Several roosting hollows known in Pyrites section and Coimadai block, mainly in Bull Mallee, but one in a stunted Red Box and another in a Blue Box. Regularly heard calling at night in these areas. Single birds.

White-throated Needletail *Hirundapus caudacutus*
0/74, 0%. Pyrites.
Occasionally flying over in summer in thundery weather. Usually flocks of four or five.

Fork-tailed Swift *Apus pacificus*
1/74, 1%. Pyrites.
Rare. One sighting on a thundery afternoon, 10/11/84, of a few birds in a flock of White-throated Needletails. Flying over Pyrites section. Not on 1973/4 list. Less common than White-throated Needletail in southern Victoria, sightings sporadic.

Laughing Kookaburra *Dacelo novaeguineae*
32/74, 43%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common all areas with trees, especially along the Coimadai Creek, roadsides, woodland edges. Slightly less common in denser woodland. Singly to small parties.

Sacred Kingfisher *Halcyon sancta*
4/74, 5%. Pyrites, Coimadai.
Regular spring visitor, records in November only. Occasionally seen or heard along the Coimadai Creek in the Pyrites section of the Coimadai block. Single birds or pairs. One pair nested in a tunnel in a bank of the creek in the Coimadai block, during the 1984/5 season. In the Pyrites section, another pair nested 12 metres up in a Manna Gum. They made a nesting hole in the rotting core of a broken branch.

Rainbow Bee-eater *Merops ornatus*
5/74, 7%. Pyrites, Coimadai, Moonah.
Regular summer/autumn visitor, records from January to early April. Occasional in all kinds of woodland. Usually in parties of up to 15 birds. Two pairs nested in tunnels in the bank of the creek in the Coimadai block, 1984/5 season.

Skylark *Alauda arvensis* °
2/74, 3%. Residential, grassland.
Probably more common than records suggest. Heard calling in open grassland in spring, residential areas, southern end of Long Forest Rd. and western side of Coimadai Creek. Occasionally single birds seen perched on fence posts or along roadsides.

Welcome Swallow *Hirundo neoxena*
38/74, 51%. Pyrites, Coimadai, residential, grassland.
Common in spring/summer, less common at other times of year. Flying over all areas, singly to flocks of 12. Several pairs nest every year under the verandahs of a house in the Pyrites section.

Fairy Martin *Cecropis ariel*
0/74, 0%.
On 1973/4 list. Not recorded since 1984.

Richard's Pipit *Anthus novaeseelandiae*
2/74, 3%. Long Forest Rd., grassland.
Uncommon. Single bird along roadside verges or perched on fence posts in open grassland, western side of Coimadai Creek and northern end of Long Forest Rd..

Black-faced Cuckoo-shrike *Coracina novaehollandiae*
9/74, 12%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Regular spring/summer visitor, records from early September to early March. Moderately common in all kinds of woodland. Groups of one to three birds, occasionally larger flocks.

White-winged Triller *Lalage sueurii*
2/74, 3%. Coimadai, Long Forest Rd.
Uncommon spring/summer visitor. Two records of single birds, 6/10/85 and 5/1/86, in roadside trees by the Pyrites section and in mallee/Red Box woodland in the Coimadai block.

White's Thrush *Zoothera dauma*
0/74, 0%.
On 1973/4 list, probably passing through on autumn-winter dispersal. Not recorded since 1984.

Blackbird *Turdus merula* *
1/74, 1%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd.
Probably more common than records suggest. Occasional in areas of bushy growth along the two creeks. Most common in the Djerriwarrh Creek behind the Sundew Ave. subdivision. Occasionally penetrates into denser woodland from subdivisions, possibly along cleared areas under power lines or along tracks. First appearance near house in the Pyrites section in mallee, two years ago– now occasional visitors. Singly or in pairs.

Pink Robin *Petroica rodinogaster*
0/74, 0%.
On 1973/4 list, probably passing through on autumn-winter dispersal. Not recorded since 1984.

Flame Robin *Petroica phoenicea*
2/74, 3%. Grassland.
In May 1986 moderately common in grassland and bare fields along western side of Coimadai Creek, on autumn-winter dispersal into open areas. In pairs, perched on fence posts, low bushes, rocks.

Scarlet Robin *Petroica multicolor*
45/74, 61%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common. Single birds or pairs in all kinds of woodland. Slightly more common in denser woodland, but occurs wherever there are trees, even in residential areas. Quite tame, will come to houses and gardens. Nest by house in Pyrites section, 1984/5 season, was eventually deserted.

Hooded Robin *Melanodryas cucullata*
0/74, 0%.
On 1973/4 list. Not recorded since 1984.

Eastern Yellow Robin *Eopsaltria australis*
22/74, 30%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd.
Moderately common in denser woodland, not in more open areas. Usually single birds. The Ranger working in the reserve has noticed that they come to broken ground to search for insects.

Jacky Winter *Microeca leucophaea*
6/74, 8%. Pyrites, Coimadai, Moonah.
Occasional in open woodland along the two creeks in the Pyrites, Coimadai, and Moonah blocks. Not recorded other areas. Single birds or pairs.

Crested Shrike-tit *Falcunculus frontatus*
4/74, 5%. Pyrites, Coimadai.
Uncommon. Occasional sightings of single birds or pairs in open woodland along the slopes of the Coimadai Creek.

Golden Whistler *Pachycephala pectoralis*
31/74, 42%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common all areas of woodland, but slightly less common in more open areas. Singly or in pairs.

Rufous Whistler *Pachycephala rufiventris*
31/74, 42%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Spring/summer visitor, records from late September to early April. Common in all areas of woodland. Singly or in pairs.

Grey Shrike-thrush *Colluricincla harmonica*
49/74, 66%. Pyrites, Coimadai, Djerriwarrh, Moonah, Long Forest Rd., residential.
Common all areas with trees, from woodland to residential areas. Usually single birds.

Crested Bellbird *Oreoica gutturalis*
3/74, 4%. Pyrites, Coimadai.
Uncommon. Three records in dense mallee/woodland on eastern side of Coimadai Creek. Identified by call only, indicating their secretive nature. Harvey(1961) has noted the elusiveness of birds in this population.

Satin Flycatcher *Myiagra cyanoleuca*
2/74, 3%. Pyrites.
Uncommon. Two records of single birds, in woodland on the western slope of Coimadai Creek, 7/12/84, and in Grey Box woodland east of the creek, 16/6/85.

Restless Flycatcher *Myiagra inquieta*
9/74, 12%. Pyrites, Coimadai, Long Forest Rd.
Generally rare, but moderately common in spring/summer of 1985/6. All records but one from August 1985 to January 1986. Single birds in woodland on eastern side of Coimadai Creek.

Rufous Fantail *Rhipidura rufifrons*
0/74, 0%.
On 1973/4 list, probably passing through on migration. Not recorded since 1984.

Grey Fantail *Rhipidura fuliginosa*
42/74, 57%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd.
Common in all kinds of woodland, preferring areas with bushy growth. Common along the two creeks. Singly or in pairs.

Willie Wagtail *Rhipidura leucophrys*
11/74, 15%. Pyrites, Coimadai, Moonah, Long Forest Rd., residential.
Moderately common, more open areas. Regenerating woodland, residential areas, roadsides, fields with scattered trees. Occasionally along Coimadai Creek.

Spotted Quail-thrush *Cinclosoma punctatum*
1/74, 1%. Pyrites.
Rare. Single record of one bird in mallee/Red Box woodland in Pyrites section, 24/8/85. Not on 1973/4, possibly missed because rare.

White-browed Babbler *Pomatostomus superciliosus*
0/74, 0%.
On 1973/4 list. Not recorded since 1984. Long Forest may have been the species' last outpost close to Melbourne, as its range contracted northwards.

Clamorous Reed-Warbler *Acrocephalus stentoreus*
0/74, 0%. Pyrites, Coimadai.
Spring visitor. Single birds on two occasions in reeds by pools in Coimadai Creek, Pyrites and Coimadai blocks, late September and 13/11/85.

Rufous Songlark *Cinclorhamphus mathewsi*
4/74, 5%. Long Forest Rd.
Four sightings between 10/11/85 and 15/12/85, of single birds, possibly the same one, in roadside trees at northern end of Long Forest Rd.. Displaying by hovering and calling constantly. Not on 1973/4 list. An irregular spring/summer visitor (not seen in 1984).

Brown Songlark *Cinclorhamphus cruralis*
3/74, 4%. Grassland.
3 sightings between 17/11/85 and 16/2/86, of single birds in grassland on western side of Coimadai Creek. Male and female birds seen. Perched on fence posts and bushes. Not on 1973/4 list. Irregular spring/summer visitor.

Superb Fairy-wren *Malurus cyaneus*
61/74, 82%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common all areas except open grassland. Feed on the ground in open areas near undergrowth. Small parties. Nested in courtyard of house in Pyrites section, 1984/5 and 1985/6 seasons.

White-browed Scrubwren *Sericornis frontalis*
21/74, 28%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd.
Common all areas of woodland with bushy growth, especially along the two creeks and along roadsides. Singly to small parties. Secretive, more often heard than seen.

Speckled Warbler *Sericornis sagittatus*
9/74, 12%. Pyrites, Moonah, Djerriwarrh, Long Forest Rd.
Moderately common in all kinds of woodland with sparse understorey. Often associates with flocks of Buff-rumped Thornbills. Pairs or single birds. Quite shy.

Weebill *Smicrornis brevirostris*
15/74, 20%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Moderately common in all areas with trees, including residential areas. Usually in small parties.

Brown Thornbill *Acanthiza pusilla*
40/74, 54%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland with bushy growth. Singly to small parties.

Chestnut-rumped Thornbill *Acanthiza uropygialis*
3/74, 4%. Pyrites, Djerriwarrh.
Uncommon. Three records, in mallee and in Grey Box woodland, 29/5/85, 1/1/86, and 5/1/86. One or two birds at a time. Not on 1973/4 list. May have been missed because uncommon and inconspicuous, especially if in a mixed flock with other thornbill species.

Buff-rumped Thornbill *Acanthiza reguloides*
32/74, 43%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd.
Common in all kinds of woodland, especially in mallee. Usually feeding on the ground in small flocks.

Yellow-rumped Thornbill *Acanthiza chrysorrhoa*
13/74, 18%. Pyrites, Moonah, Long Forest Rd., residential.
Moderately common in areas of grassland with scattered trees. Edges of woodland, roadsides, regenerating areas, and residential areas. In small flocks.

Yellow Thornbill *Acanthiza nana*
18/74, 24%. Pyrites, Coimadai, Moonah, Djerriwarrh, residential.
Moderately common in all kinds of woodland. Feed in the foliage in small flocks. Favour Moonah bushes.

Striated Thornbill *Acanthiza lineata*
46/74, 62%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland, less common in trees in residential areas. Parties of up to 10 birds feeding in the foliage.

Southern Whiteface *Aphelocephala leucopsis*
0/74, 0%.
On 1973/4 list. Not recorded since 1984. If still present, certainly rare, as it is throughout this region (Pescott, 1983). Would be expected to favour grassy areas.

Varied Sitella *Daphaenositta chrysoptera*
20/74, 27%. Pyrites, Coimadai, Moonah, Djerriwarrh.
Moderately common in all kinds of woodland. In small parties, feeding along branches and tree trunks. Seen building a nest in a Grey Box by the Coimadai Creek, Pyrites section, 1984/5 season.

White-throated Treecreeper *Climacteris leucophaea*
53/74, 72%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland. Also more open areas with trees, residential areas. Usually singly and in pairs, but four seen together once. Feeding on tree trunks. Single birds have been seen roosting at night, clinging to the outside walls of houses. Will feed at bird feeding tables.

Brown Treecreeper *Climacteris picumnus*
4/74, 5%. Coimadai, Moonah.
Uncommon. In the larger timber along the slopes of the two creeks, especially in the Moonah block. Single birds or pairs.

Red Wattlebird *Anthochaera carunculata*
26/74, 35%. Pyrites, Coimadai, Long Forest Rd., residential.
Common in more open areas. Open woodland, regenerating woodland, residential areas, roadsides, and along Coimadai Creek. Less common in denser woodland, but penetrating more in recent years. Singly to small parties. Have been seen feeding on flowering Yellow Gums in Coimadai block.

Spiny-cheeked Honeyeater *Acanthagenys rufogularis*
1/74, 1%. Pyrites.
Rare. One record of a single bird in mallee on eastern side of Coimadai Creek, 21/8/85.

Noisy Miner *Manorina melanocephala*
0/74, 0%.
On 1973/4 list. Not recorded since 1984.

Yellow-faced Honeyeater *Lichenostomus chrysops*
53/74, 72%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Very common in spring/summer, from August to March. A few birds remain over winter. Common in all kinds of woodland, less common where trees are scattered. Singly to small parties. Pair nested in courtyard of house in Pyrites section, 1984/5 season.

White-eared Honeyeater *Lichenostomus leucotis*
21/74, 28%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd.
Common in all kinds of woodland. Usually single birds.

Yellow-tufted Honeyeater *Lichenostomus melanops*
6/74, 8%. Pyrites, Coimadai, Moonah.
Occasional in the larger timber along the two creeks. Singly to small parties.

Fuscous Honeyeater *Lichenostomus fuscus*
0/74, 0%.

On 1973/4 list. Not recorded since 1984. Rare and nomadic in this region (Pescott 1983), more common north of the Divide.

White-plumed Honeyeater *Lichenostomus penicillatus*
3/74, 4%. Long Forest Rd., residential.
Uncommon. In scattered trees in cleared areas, residential areas, roadsides. Usually singly.

Black-chinned Honeyeater *Melithreptus gularis*
0/74, 0%.
On 1973/4 list. Not recorded since 1984. If still present, very rare. Favours Yellow Gum, which is common in the Long Forest.

Brown-headed Honeyeater *Melithreptus brevirostris*
27/74, 36%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland, occasional in trees in residential areas. Singly to small parties, feeding in the foliage.

White-naped Honeyeater *Melithreptus lunatus*
23/74, 31%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd.
Common in all kinds of woodland. Small parties feeding in the foliage.

New Holland Honeyeater *Phylidonyris novaehollandiae*
1/74, 1%. Long Forest Rd., residential.
Uncommon. Open areas. Roadside trees, trees in residential areas, along the southern Coimadai Creek. Singly to small parties.

Eastern Spinebill *Acanthorhynchus tenuirostris*
22/74, 30%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland, coming into residential areas and gardens to feed on flowering trees and shrubs. Singly or in pairs, occasionally more at a source of food.

White-fronted Chat *Ephthianura albifrons*
0/74, 0%. Coimadai, grassland.
Uncommon. Pair in a Boxthorn bush in grassland, west side of Coimadai Creek, early 1984. Three birds in rushes in grassy area by Coimadai Creek, late 1985.

Mistletoebird *Dicaeum hirundinaceum*
25/74, 34%. Pyrites, Coimadai.
Common from September to early December, 1984, 20 records. Uncommon at other times. Seen along Coimadai Creek, and in woodland to the east of the creek. Singly or in pairs, often in Mistletoe. Pair nested in a Manna Gum with Mistletoe, 1984/5 season.

Spotted Pardalote *Pardalotus punctatus*
26/74, 35%. Pyrites, Coimadai, Moonah, Djerriwarrh, residential.
Common in all kinds of woodland. Single birds or pairs. Pair nested in tunnel in bank of Coimadai Creek in Coimadai Block, 1984/5 season.

Yellow-rumped Pardalote *Pardalotus xanthopygus*
8/74, 11%. Pyrites, Djerriwarrh.
With casual observations, recorded at least ten times. First seen drinking from a water bowl near house in Pyrites section, 17/11/84. Moderately common in mallee. All records but one from mallee in Pyrites section, eastern side of Coimadai Creek. Single birds. Not on 1973/4 list. May have been missed because of confusion with similar Spotted Pardalote.

Striated Pardalote *Pardalotus striatus*
34/74, 46%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland, and trees in residential areas. Singly or in pairs.

Silvereye *Zosterops lateralis*
39/74, 53%. Pyrites, Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland, and in trees and gardens in residential areas. Small parties.

European Goldfinch *Carduelis carduelis* *
8/74, 11%. Pyrites, Long Forest Rd., residential.
Uncommon. Small flocks, along roadsides, residential areas, and regenerating, grassy woodland. Occasionally small numbers, 2-3 birds, come into denser woodland.

House Sparrow *Passer domesticus* *
2/74, 3%. Grassland, residential.
More common than records indicate. Moderately common in open grassland, and around residences and gardens. Flocks of up to 20 in grassland. Also grassy areas along Coimadai Creek, especially where there are Boxthorn bushes.

Tree Sparrow *Passer montanus* *
1/74, 1%. Residential.
May be more common than records indicate, as may be overlooked in mixed flocks with the more numerous House Sparrow. One record of a single bird with House Sparrows in a residential garden in Sundew Ave., 28/9/85. Not on 1973/4 list. Indicates the establishment of introduced birds in response to subdivision.

Red-browed Firetail *Emblema temporalis*
18/74, 24%. Pyrites, Coimadai, Moonah, Long Forest Rd., residential.
Moderately common in more open areas with bushy growth. Roadsides, regenerating areas, and bushy growth along the two creeks and in gullies. In small flocks. Two nests along the Coimadai Creek in 1984/5 season – one in a Boxthorn, and one on a low branch of a Blue Box.

Diamond Firetail *Emblema guttata*
7/74, 9%. Pyrites, Moonah, Long Forest Rd., residential.
Moderately common in Moonah block on the western slopes of the Djerriwarrh Creek, Grey Box woodland. Occasional in other open areas with some trees, regenerating woodland, residential areas, along roadsides. Singly to small parties.

Zebra Finch *Poephila guttata*
1/74, 1%. Grassland.
More common than records indicate. In open grassland, especially on the western side of Coimadai Creek. Flocks of up to 15 birds, perched on fence posts or in bushes, or feeding in roadside grass.

Common Starling *Sturnus vulgaris* *
10/74, 14%. Pyrites, Coimadai, Long Forest Rd., residential, grassland.
Common in grassland, cleared and residential areas, woodland edges, roadsides. Since about two years ago, present along the Coimadai Creek in the Pyrites section. Singly to large flocks.

Common Mynah *Acridotheres tristis* *
0/74, 0%. Residential.
Rare. One observation of two birds perched on a compost heap in a residential garden, early 1984.

White-winged Chough *Corcorax melanorhamphos*
29/74, 39%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland. One record in residential area, in a wooded gully crossing Sundew Ave. Feed in flocks of 5-15 birds, on the ground under trees or along roadsides. Fly up to trees when disturbed. Many old nests are present. One active nest was found in the Pyrites section, 1984/5 season.

Australian Magpie-lark *Grallina cyanoleuca*
7/74, 9%. Long Forest Rd., residential.
Occasional in cleared areas with some trees, residential areas, roadsides. In pairs.

Dusky Woodswallow *Artamus cyanopterus*
3/74, 4%. Coimadai, Long Forest Rd.
Spring/summer visitor. Uncommon, woodland edges or roadside trees, especially at the northern end of Long Forest Rd.. Largest flock of eight birds seen on the western side of the Coimadai Creek, opposite the Coimadai block.

Australian Magpie *Gymnorhina tibicen*
51/74, 69%. Coimadai, Moonah, Djerriwarrh, Long Forest Rd., residential, grassland.
Common in more open areas, trees in cleared and residential areas, woodland edges, roadsides, grassland. Less common in denser woodland, but birds sometimes penetrate along tracks or power lines, and come to houses in the bush. Frequently roost in Grey Box trees near a house in the woodland, Pyrites section. Singly to small flocks. A nest with two chicks and adults feeding dependent young in trees along Long Forest Rd. in October, 1985.

Pied Currawong *Strepera graculina*
3/74, 4%. Pyrites.
Uncommon. Three records in mallee in the Pyrites section, 31/8/85, 8/5/86, and 22/5/86. Pairs and single birds. Probably passing through on dispersal.

Grey Currawong *Strepera versicolor*
45/74, 61%. Pyrites, Coimadai, Djerriwarrh, Long Forest Rd., residential.
Common in all kinds of woodland, occasionally coming into trees in residential areas. Usually singly or in pairs, but a group of six seen once, probably a family party. A nest with two chicks in a Bull Mallee beside Canopus Circuit, 15/9/85 (Hewish, 1985).

Australian Raven *Corvus coronoides*
14/74, 19%. Pyrites, Coimadai, Moonah, Long Forest Rd., residential.
Moderately common. Most records from woodland edges, roadsides, Occasionally in or over more wooded areas. There is a feeling among the observers that they have become less common in the last two years. Singly or in pairs.

Little Raven *Corvus mellori*
45/74, 61%. Pyrites, Djerriwarrh, Long Forest Rd., residential, grassland.
Common in all open areas, open woodland, woodland edges, cleared and residential areas, roadsides, and open grassland. Usually small flocks. Also single birds in denser woodland on eastern side of Coimadai Creek, coming to houses in the bush.

## APPENDIX

Scientific names of Long Forest plants

| | |
|---|---|
| Fragrant Saltbush | *Rhagodia parabolica* |
| Sweet Bursaria | *Bursaria spinosa* |
| Prickly Moses | *Acacia verticillata* |
| Gold-dust Wattle | *A. acinacea* |
| Golden Wattle | *A. pycnantha* |
| Wirilda | *A. retinodes* |
| Varnish Wattle | *A. verniciflua* |
| Black Wattle | *A. mearnsii* |
| Eutaxia | *Eutaxia microphylla* |
| Red Stringybark | *Eucalyptus macrorhyncha* |
| Manna Gum | *E. viminalis* |
| Yellow Gum | *E. leucoxylon* |

| | |
|---|---|
| Long-leaf Box | *E. goniocalyx* |
| Yellow Box | *E. melliodora* |
| Grey Box | *E. microcarpa* |
| Bull Mallee | *E. behriana* |
| Red Box | *E. polyanthemos* |
| Blue Box | *E. bauerana* |
| Woolly Tea-tree | *Leptospermum lanigerum* |
| River Bottlebrush | *Callistemon paludosus* |
| Moonah | *Melaleuca lanceolata* |
| Cherry Ballart | *Exocarpos cupressiformis* |
| Wedge-leaf Hop-bush | *Dodonea cuneata* |
| Turkey-bush | *Myoporum deserti* |
| Drooping Cassinia | *Cassinia arcuata* |
| Shiny Cassinia | *C. longifolia* |
| Spiny Rush | *Juncus acutus* |
| Finger Rush | *J. subsecundus* |
| Tussock Grass | *Poa australis* |
| Wallaby-grasses | *Danthonia* spp. |
| Variable Spear-grass | *Stipa variabilis* |
| Kangaroo Grass | *Themeda australis* |
| Bulrush | *Typha angustifolia* |

## ACKNOWLEDGMENTS

Particular acknowledgment must be given to Rosemary and Michael Baker for their efforts over many years, in collecting and disseminating information on the Long Forest, and working for its preservation.

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I would like to thank the Royal Australasian Ornithologists' Union (R.A.O.U.) for access to the 10' block records for the 'Atlas of Australian Birds'.

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# Golden Whistlers and Rufous Whistlers in Eastern Park, Geelong

### Craig Morley

The following information illustrates the seasonal occurrence of Golden Whistlers *(Pachycaphala pectoralis)* and Rufous Whistlers *(P. rufiventris)* in Eastern Park.

In 1983, based on the results of 34 observation sessions from December 1979 to July 1982 (Morley 1983), I did not clarify the status of the Rufous Whistler, and classified the Golden Whistler as a "frequent visitor". The table below shows the percentage of seasonal observation sessions in which the two species were recorded during a total 120 observation sessions (average 2.4 hrs/session) from 4 December 1979 to 13 January 1986.

| SEASON | SUMMER | AUTUMN | WINTER | SPRING |
|---|---|---|---|---|
| NO. OF OBSERVATION SESSIONS | 35 | 39 | 22 | 24 |
| GOLDEN WHISTLER | 9% | 74% | 73% | 42% |
| RUFOUS WHISTLER | 29% | 8% | – | 29% |

From the table it is evident that the Golden Whistler is an Autumn-Winter visitor with the species being recorded in 74% of Autumn and 73% of Winter observation sessions. Birds recorded during this time are predominately immature birds with bronze colouring on the wings. Coloured males are seen only occasionally, for instance December 1979, mid-August 1984 (Grant Baverstock pers.comm.) and May and June 1985. Golden Whistlers are less frequent in Spring and far less frequent in Summer.

The figures for the Rufous Whistler illustrate the migratory habits of this species in southern Australia (Pizzey 1980). It is present in spring and summer, less frequent in autumn and absent in winter. My latest record for the Rufous Whistler is in early June 1984 (Grant Baverstock pers.comm.) Birds recorded in the Eastern Park are more usually females and immatures. A pair of Rufous Whistlers was present in the same area of the Park for at least three weeks from 20 October 1985. The male (an immature) was seen more often and had a narrower than usual black chinstrap and striations on the breast and was pale above. These birds may have bred or attempted to breed. The male in particular was calling frequently and strongly on 20 October, and 2 and 9 November.

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# Further Fauna Surveys at Moggs Creek – Post Ash Wednesday Wildfire

D.F. King

## Introduction

The opportunity arose during early and mid-May 1986, for the writer to spend several days in the area of Moggs Creek nominated by the G.F.N.C. as its post-fire regeneration survey area. This report is restricted to fauna only: suffice it to say that the understorey and colonising species of flora have made a remarkable degree of recovery in the three years following the fire.

Live mammal trapping was conducted under the auspices of trapping permit No. 84-124 issued by the Fisheries and Wildlife Division of the Ministry of Conservation, Forest and Lands.

Wire cage traps were used on all occasions, baited with the standard mixture of honey, peanut butter and rolled oats. A feature of this series of trapping was the success rate. Of the total of 41 trap nights, 36 captures were made. Six traps were used for each of six nights and five traps on the seventh.

## Results and Procedure

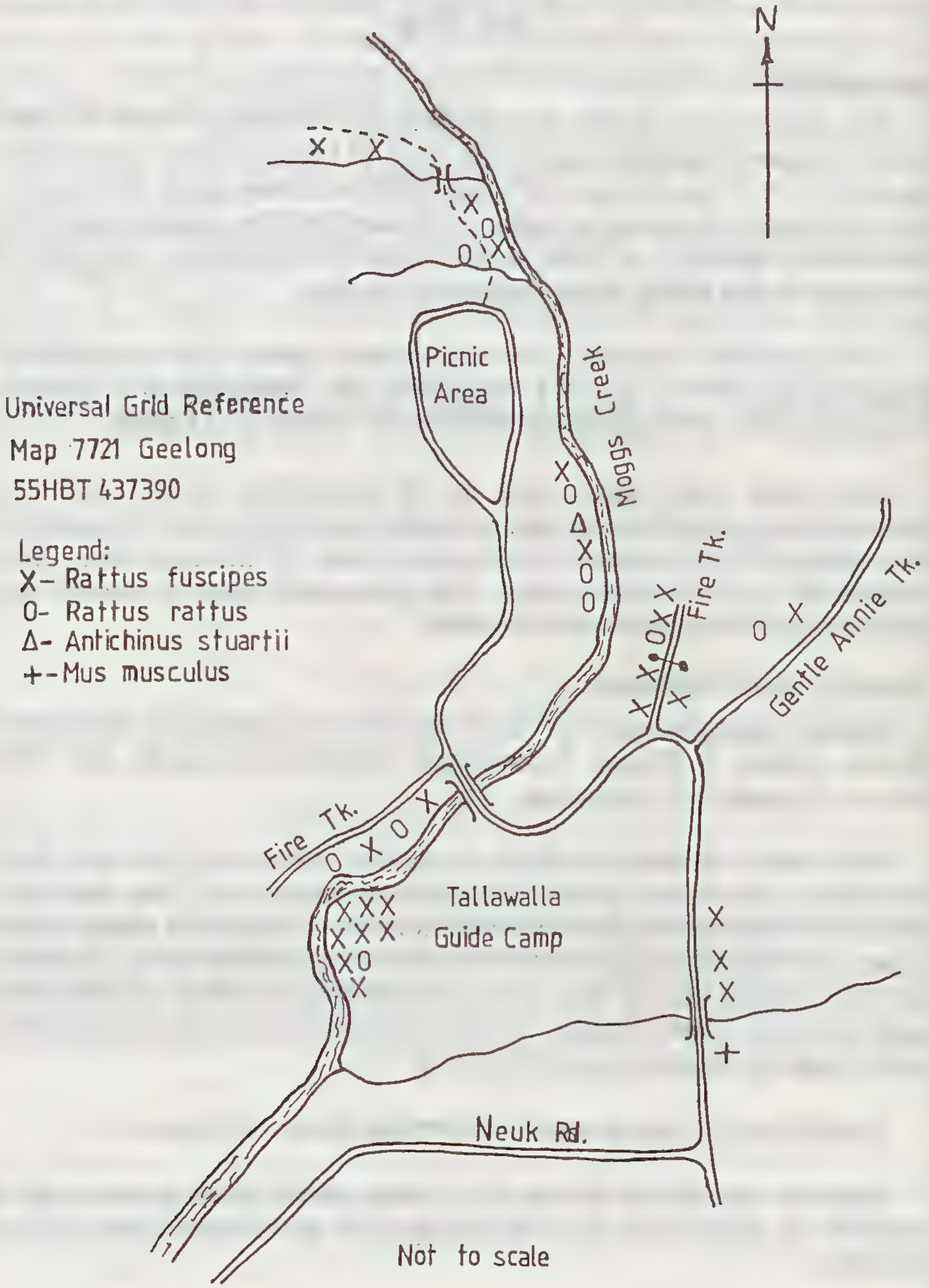
Animals captured were 24 Bush Rat *Rattus fuscipes*, 10 Black Rat *Rattus rattus*, 1 Brown Antechinus *Antechinus stuartii* and one House Mouse *Mus musculus*.

Traps were placed on each occasion sufficiently remote from previously used sites to avoid subsequent recapture. This assumes that in the two instances where sites were on opposite sides of the creek, animals did not cross the creek during their foraging. Support for this assumption is that when examined no animal showed any sign of having entered water, which would have been necessary if the creek was to be crossed at that time.

Distribution of the animal captures is shown in Figure 1.

Weather conditions during the survey period were mixed, with a number of days with rain including one of exceptionally heavy rainfall.

Figure 1
Location Map G.F.N.C. Survey Area



Temperatures ranged from 18°C. to a minimum at night of around 12°C.

Apart from the dominant tree species of Blue Gum, Messmate and Iron Bark, the vegetation at all sites consisted of an understorey of a regenerated growth of Prickly Moses *Acacia ulicifolia* and Varnish Wattle *Acacia verniciflua*, with native grasses as ground cover. The Acacia in most instances were virtually impenetrable.

Birds observed in the area during this survey period are as follows:

| | |
|---|---|
| Peregrine Falcon | *Falco peregrinus* |
| Sulphur-crested Cockatoo | *Cacatua galerita* |
| Australian King-Parrot | *Alisterus scapularis* |
| Crimson Rosella | *Platycercus elegans* |
| Welcome Swallow | *Hirundo neoxena* |
| Blackbird | *Turdus merula* |
| Flame Robin | *Petroica phoenicea* |
| Scarlet Robin | *Petroica multicolor* |
| Grey Shrike-thrush | *Colluricincla harmonica* |
| Grey Fantail | *Rhipidura fuliginosa* |
| Willie Wagtail | *Rhipidura leucophrys* |
| Superb Fairy-wren | *Malurus cyaneus* |
| White-browed Scrubwren | *Sericornis frontalis* |
| Brown Thornbill | *Acanthiza pusilla* |
| Red Wattlebird | *Anthochaera carunculata* |
| White-naped Honeyeater | *Melithreptus lunatus* |
| New Holland Honeyeater | *Phylidonyris novachollandiae* |
| Spotted Pardalote | *Pardalotus punctatus* |
| Silvereye | *Zosterops lateralis* |
| Red-browed Firetail | *Emblema temporalis* |
| Australian Magpie | *Gymnorhina tibicen* |
| Pied Currawong | *Strepera graculina* |
| Australian Raven | *Corvus coronoides* |

Of particular note were the large number of immature Crimson Rosellas and the comparatively few adults. Also in large flocks were Spotted Pardalotes, which on a number of occasions were observed feeding in relatively clear areas on the ground.

The Peregrine Falcon flew over the survey area parallel to the coast; on reaching the high ground around Fairhaven the bird went into a characteristic vertical stoop with wings half closed. Termination of this spectacular action was unfortunately screened from view by tall vegetation.

## Discussion

Results of the mammal trapping are very encouraging. Previous surveys have indicated few native species outnumbered by the introduced *Rattus rattus* and *Mus musculus*. This situation has now reversed with the native *Rattus fuscipes* in much higher proportion. Undoubtedly this is largely due to the habitat changing to the advantage of native species. Explosive growth of the understorey has provided good cover and food for the omnivorous *R. fuscipes*. All specimens of *R. fuscipes* exhibited a less than distinct rufous colouring around the neck.

Particularly pleasing was the capture of an *Antechinus stuartii*. This is the first indication of recolonization by this species in the survey area.

In general when approaching a trap it was easy to be positive as to whether it contained a *R. fuscipes* or *R. rattus* purely by the occupant's behaviour. *R. fuscipes* were calm and complacent, whereas *R. rattus* immediately became agitated and continuously moved around in the trap. This behaviour, however, was not observed when traps were sited at those places furthest from Moggs Creek. In those instances *R. fuscipes* behaved in the same manner as *R. rattus* and could not be positively identified without close examination. The question is thus raised: are those *R. fuscipes* who have moved out from their original colonization of the area immediate to the creek, less tractable by nature than their relatives around the creek? It may well be conditioning through need to establish themselves in a more hostile territory.

## ACKNOWLEDGEMENTS

I am grateful to the members of the 1st Portarlington Girl Guide Company who enthusiastically assisted in transporting mammal traps, marking sites and retrieving traps.

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# More Notes on the Marbled Gecko in Geelong

### Trevor Pescott

In a recent issue of the "Geelong Naturalist", Lawrie Conole (1986) wrote of the occurence of the Marbled Gecko *Phyllodactylus marmoratus* in the Geelong area, particularly in reference to specimens found in Geelong West, and speculated on the origin of those individuals.

I would like to supplement his observations with some of my own, and add notes from several publications which refer to the species in the broader Geelong area.

My notes on the Marbled Gecko include the discovery of several specimens in stacks of basalt "field stones" in the Gheringhap-Bannockburn area west of Geelong, and of a single, multi-tailed specimen in Bell Post Hill in 1977.

Mr. Peter Tremul, who has a wide experience of reptiles throughout south-eastern Australia, has seen only one Marbled Gecko in the Geelong area, apart from those in the Newtown quarry site. That specimen was in the roof of a house in Highton about two years ago, and appeared to be in excellent condition.

While the species is generally regarded as an inhabitant of areas north of the Dividing Range, its presence in south-western Victoria is recognised in several published references. However I suspect that it is neither plentiful nor widespread, retaining isolated populations only where ideal conditions are found.

Because of the habitat and climate (average rainfall 500-600 mm p.a.) I would expect the Brisbane Ranges to be suitable to the needs of the Marbled Gecko, and that is supported by Conole's suggestion. However, I can not find any record of specimens being collected there.

Emison *et al* (1975) include the Marbled Gecko in their list of species found in the Western District – Otway Ranges region (L.C.C. Corangamite Study Area) and note it to be "rare but probably widespread in the north eastern plains (of the Study Area i.e. N.E. of Colac). It is usually found under the bark of large trees or in logs and rubble in grassy woodland or grassland on the volcanic plains." (The inclusion of the species on their list is based on a Museum of Victoria specimen (D1619) which was collected at Garvoc in the Western District by J. Baird on 8 February 1907.)

Rawlinson, writing in Arnold (1971), notes that "the marbled gekko (sic) *Phyllodactylus marmoratus*, extends from the Eyrean (zone) into the warm, temperature Bassian, through the Kilmore gap. Gekkos (sic) are probably restricted in the Bassian by their thigmothermic habits and oviparous mode of reproduction."

He includes in the warm, temperate Bassian zone the volcanic and coastal plains of south-western Victoria as well as the coastal plains of south-eastern Victoria and the inland margins of the Eastern Highlands. These areas have low elevations, low average annual rainfall and open climax vegetation which combine to result in high ground surface temperatures during summer.

Marbled Gecko with a malformed tail, Bell Post Hill, July 1977.

Thigmothermic reptiles are the non-basking ones, those that gain their body temperature directly from their environment, thus the storage there of solar heat is critical to their survival.

Rock stacks, stone fences and eroded (or quarried) lava flows exposed to direct sunlight would provide ideal habitat for the Marbled Gecko since they act as passive solar stores. Timber, either fallen or still standing, may be less effective since wood is not as effective in heat transmission or storage as rock.

The Newtown site mentioned by Conole is actually an almost perfect passive solar heater – it is a vertical rock face about five metres high and 80 metres long, and was either blasted open so that Riverside Road could be constructed or perhaps to get rock as part of the Marnock Vale quarry.

It faces due north, so that it picks up sunlight throughout the year, particularly in winter with the lower angle of the sun, and to the south it is blanketed by soil that helps hold heat in the rock.

## ACKNOWLEDGEMENTS

My thanks to J. Coventry of the Museum of Victoria for the data on the specimen D1619 in the Museum collection, and to L. Conole and P. Tremul for their comments on the draft.

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# The Margin Shells *(Marginellidae)* of Central Victorian Shores

### Dean Hewish

The *Marginellidae* (margin shells) is a group of marine gastropods which are numerous in southern Australian waters, but they are often overlooked because of their small size. The situation is different in some other parts of the world, notably the tropical Atlantic Ocean and southern African waters, where the large and brightly coloured species of this family are commonly known as Gem shells and highly prized by collectors.

Nevertheless, the Australian species are attractive because of their high polish and delicate shapes.

Although many of the Australian Marginellas live in deep water, it is possible for the determined collector to obtain a representative collection of this family by searching in shell grit, particularly on ocean beaches along the southern Australian coastline. A difficulty arises, however, in identifying the various species collected.

With the exception of some of the larger and more common species, the Marginellas have been ignored in most field guides to Australian Mollusca, and the collector may be forced to search the scientific literature in order to identify even some of the more abundant species. As most of the work on this family was carried out early in this century, many of the important reference works are becoming difficult to obtain.

This article is intended as a field guide to the species most likely to be found in the Geelong area and along the southern Victorian coastline. A more comprehensive article, depicting all southern Australian species and revising the classification of species within the *Marginellidae* is in preparation and will be available in the future for those wishing to study the family further.

## Methods

The species have been illustrated with reference to the type specimens in most cases and to previous publications if the types were unavailable. The diagrams were drawn using Macpaint™ (Apple Computer inc.) and Fullpaint™ (Ann Arbor Softworks) on an Apple Macintosh™ computer. They were edited with the help of Laserprint™ (Ann Arbor Softworks) to add fine detail before final printing. The slightly jagged outlines of the illustrations are a consequence of the computer graphics and do not represent features of the shells.

All species are white or cream coloured unless otherwise stated. The distribution and abundance of each species have been estimated from my own collecting experience, and from the literature listed in the Bibliography.

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## Identification of *Marginellidae* species

The important features used to identify each species have been illustrated, with other diagnostic features given in the brief description. The most significant aspects of shell structure used in identification are shown in figure 1.

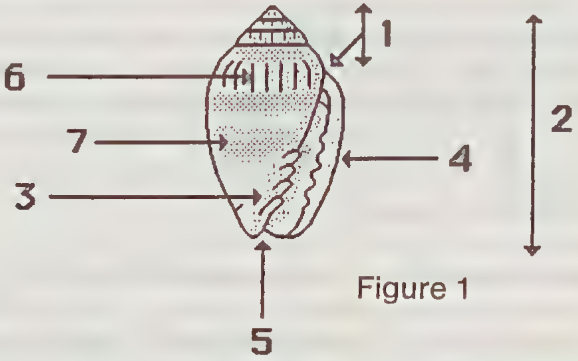


Figure 1

Figure 1: A diagrammatic representation of a *Marginella* shell with the important features used in identification.

Some of these features may vary slightly between individuals of the same species. The most variable features are shell size, colour, strength of lip denticulations and strength of longitudinal ridges. In some species, the number of columella plaits may be variable.

**Species:**

In preparing this list, I have included all of those species which are likely to be encountered by collectors in central Victoria, and have added a few of the deeper water species which may very rarely be found on beaches. The Bibliography lists several papers which describe other, rarer species, should a fortunate collector find a specimen not shown in this article.

*Marginella pygmaeoides* (Singleton 1937)

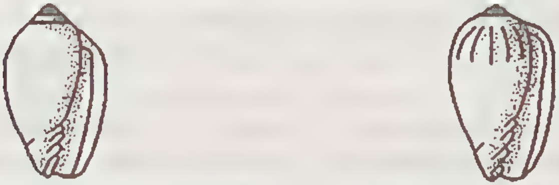
This species is the most common member of the family in Victorian waters and the shells form a major component of shell debris along the beaches of south western Victoria. It is easily identified by its elongate shape and moderate size. It lives sub-tidally, in sand. 4.6mm

---

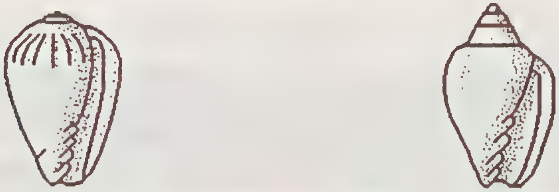
(1) Shell shape, particularly the relative height of the spire and the position at which the aperture joins the body whorl.
(2) Shell size (watch out for immature specimens!)
(3) The number and placing of columella plaits. All species of *Marginellidae* have at least one (usually three or four) of these folds on the lower part of the aperture. The smooth shape and high polish of the *Marginellidae* distinguish them from related families with similar folds, for example the mitres *Mitridae),* nutmegs *(Cancellariadae)* and volutes *(Volutidae).*
(4) The presence or absence of teeth (denticulations) on the outer lip. In some species these may be as strong as those found in the cowries *(Cypraeidae).*
(5) The form of the anterior canal, which may be wide or narrow, or even closed in some species.
(6) Shell ornamentation, where present (usually longitudinal ridges).
(7) Shell colour and pattern, where present (Note; the colours of many species fade with time, especially on the beach).

*Marginella turbinata* (Sowerby 1846)

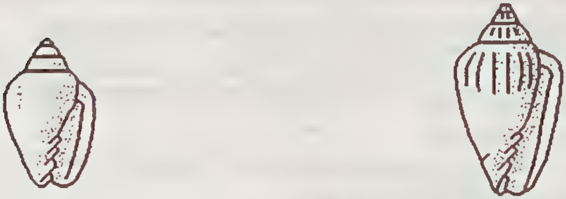
The second most common species to be found on beaches in south western Victoria is *M. turbinata.* The rounded shape and longitudinal ridges on the shoulder of the whorls characterise this shell. The shape of the shell may vary slightly between individual specimens. The ridges may also vary slightly in prominence and may be eroded in beach specimens. A broad variety of this species, which also occurs in Victoria, has been unnecessarily given specific status as *M. pattisoni* (Cotton 1944). 6-8mm



Marginella pygmaeoides Marginella turbinata



M. turbinata, broad variety Marginella muscaria



Marginella johnstoni Marginella formicula

Figure 2

The illustrations are not drawn to scale. Average shell lengths are given with the descriptions.

*Marginella muscaria* (Lamarck 1822)

This species is very common in eastern Australia, and occurs mainly east of Melbourne. The shell is easily identified by its bulbous body whorl with longitudinal ridges increasing in size toward the lip, its thick lip and large size. 10-13mm

*Marginella johnstoni* (Petterd 1884)

This species is best described as a miniature version of *M. muscaria.* It may be locally common and lives just below low tide level. 5-7mm

*Marginella formicula* (Lamarck 1822)

*M. formicula* is certainly the most beautiful member of the family in Victoria. It is not common, being more abundant in Tasmania. The strong longitudinal ridges and high spire make it easily distinguishable from the other species. 7-10mm

*Marginella tasmanica* (Tenison Woods 1875)

Closely related to *M. johnstoni* and *M. muscaria,* the shell of *M. tasmanica* is much more elongate than either of those species. It is much less common than these two species. 7-9mm

*Marginella olivella* (Reeve 1865)

A deep water species, *M. olivella* is not commonly found on the beach. Although it is more elongate and cylindrical in shape, it is otherwise obviously related to *M. pygmaeoides.* 7mm

*Marginella inconspicua* (Sowerby 1846)

This small shell is apparently rare in Victoria. It is smaller and relatively wider than *M. pygmaeoides,* with a short spire. In fresh condition it has three pale yellow bands, but these fade after the death of the mollusc. It lives in deeper water than *M. pygmaeoides.* 5mm

*Marginella diplostrepta* (May 1916)

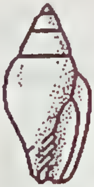
This is an uncommon shell in Victoria, but one which occurs occasionally on ocean beaches. The cylindrical shape and two columella plaits are characteristic of this shell. 6mm

*Marginella strangei* (Angas 1877)

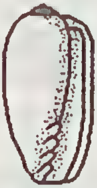
Superficially similar to *M. pygmaeoides,* this shell is smaller and narrower, with a short spire and the plaits on the columella reaching half way along the aperture. It is much less common than *M. pygmaeoides* and lives in deeper water. Because the original description of this species was ambiguous, it has apparently attracted several scientific names, and Tasmanian specimens have been called *M. schoutanica* (May 1913). 4mm

*Marginella victoriae* (Gatliff & Gabriel 1908)

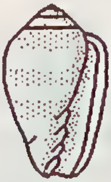
This shell is shaped like *M. pygmaeoides*, but can be readily distinguished by the presence of strong denticulations on its outer lip. It is also much smaller than *M. pygmaeoides*. *M. victoriae* is not very common, but can be found on beaches in Victoria. 3.5mm



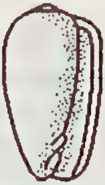
Marginella tasmanica



Marginella olivella



Marginella inconspicua



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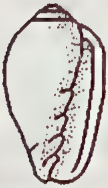
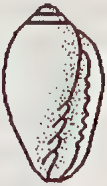


Marginella strangei



Marginella victoriae

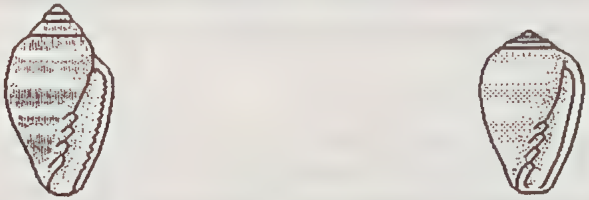
Figure 3

*Marginella mayi* (Tate 1900)

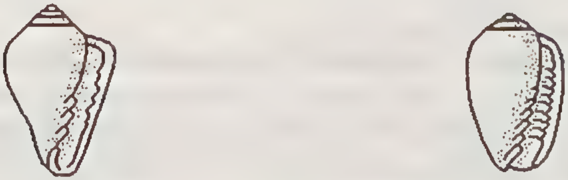
A large, bulbous, shell with a high spire, *M. mayi* occurs in deep water and is rarely, if ever, found on the beach. Fresh specimens are brown-banded, but the colour fades rapidly after the death of the mollusc. 10-15mm

*Marginella caducocincta* (May 1916)

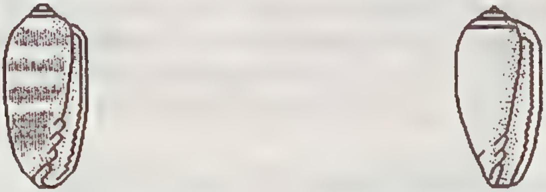
This is a brown-banded shell, which differs from *M. mayi* in its very short spire and triangular shape. Like *M. mayi,* it lives in relatively deep water. 4mm



Marginella mayi Marginella caducocincta



Marginella geminata Marginella subbulbosa



Marginella mustellina Marginella tridentata

Figure 4

*Marginella geminata* (Hedley 1912)

Not a common shell in Victoria, *M. geminata* is found in moderately deep water, but may rarely be washed up on beaches. It has a distinctive shell of triangular outline which cannot be confused with any other Victorian species. 4mm

*Marginella subbulbosa* (Tate 1878)

Living from low tide level to the edge of the continental shelf, this small shell is somewhat variable in width but can be identified by its numerous columella plaits (5) and bulbous shape. Typical specimens have ridges within the aperture which extend inwards from the teeth on the outer lip, but these ridges may be weak or absent. In some localities it can be common on beaches. 3mm

*Marginella mustellina* (Angas 1871)

Like *M. muscaria*, *M. mustellina* is more common in the eastern part of Australia, and uncommon west of Melbourne. The elongated shape and brown colour bands are characteristic of this shell. The outer lip may be denticulate along its whole length or only in the anterior part. 7mm

*Marginella tridentata* (Tate 1878)

Superficially like *M. mustellina*, this shell is easily recognised by the presence of only three folds on the columella, and its lack of colouration. The outer lip of the shell is denticulate. More common in South Australia, it has been collected from beaches in south western Victoria. 7mm

*Marginella cymbalum* (Tate 1878)

This is one of a sub-group of the *Marginellidae* which has the spire buried as in cowry *(Cypraea)* shells. This shell is oval in shape, with numerous (12) plaits on the columella. The outer lip is smooth. It is locally common, particularly in the western part of the state and lives under rocks in sand at extreme low tide level. 5mm

*Marginella minutissima* (Tenison Woods 1876)

This species has a tiny shell and lives well below low tide level. Its characteristic features are the three columella plaits and its small size. 3mm

*Marginella whani* (Pritchard & Gatliff 1900)

*M. whani* and *M. ovulum* are the largest of the Victorian marginellas which have the spire buried. *M. whani* can be easily identified by its cylindrical shape and wide anterior canal. It can be found in shell debris on beaches in southern Victoria. 9mm

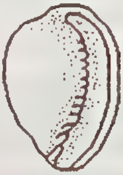
*Marginella flindersi* (Pritchard & Gatliff 1898)

This shell has a buried spire and is more elongate and narrow than *M. minutissima*. 1.5mm

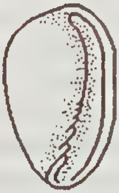
*Marginella halli* (Pritchard & Gatliff 1898)

This minute, oval shell is easily overlooked in shell sand because of its small size. The distinguishing feature of this species is its shape, which is much more rotund than other marginellas. It is almost spherical in outline. 2mm

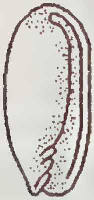
Figure 5



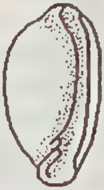
Marginella cymbalum



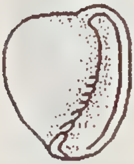
Marginella minutissima



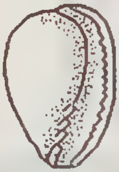
Marginella whani



Marginella flindersi



Marginella halli



Marginella petterdi

*Marginella petterdi* (Beddome 1883)

The denticulate outer lip and less numerous columella plaits (4) distinguish this shell from *M. cymbalum*. It is relatively common in shell debris on some ocean beaches. 5mm

*Marginella ovulum* (Sowerby 1846)

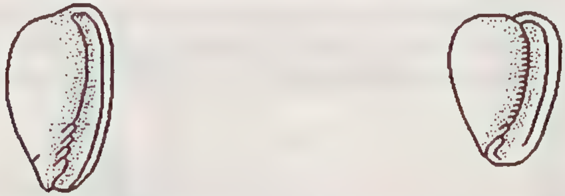
This species lives in moderately deep water and its shell is uncommon on beaches. It has been confused in the past with *M. petterdi* and it is possible that the two are merely varieties of the same species. *M. ovulum* is typically much larger and more elongate than *M. petterdi*. 9mm

*Marginella problematica* (Gatliff & Gabriel 1916)

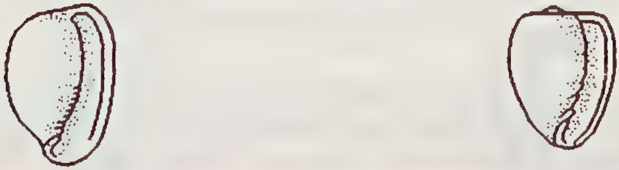
Although superficially like *M. cymbalum*, *M. problematica* can be easily separated by its triangular shape and the flattened summit on the shell. 3.5mm

*Marginella alternans* (Pritchard & Gatliff 1898)

This is a very small shell with a buried spire. It has numerous columella plaits (7), which are crowded into the anterior half of the aperture and are alternately strong and weak. 1.5mm



Marginella ovulum Marginella problematica



Marginella alternans Marginella angasi

Figure 6

*Marginella angasi* (Crosse 1870)

This minute shell has attracted more names than any other marginella in Australian waters because of its highly variable shape. Its characteristic features are its constricted base, its flat spire, and its numerous (a maximum of 7) columella plaits which are narrow and move deeper within the aperture as they ascend the columella. It is a common species but its small size makes it hard to find among shell debris. 2mm

### Collecting *Marginellidae*

Collecting such small shells as marginellas requires special techniques and a considerable degree of determination. The best method is to scrape up shell debris from the beach, label its collection locality, then sort through the shells at home. I have found the best technique is to wash the debris with water in a kitchen strainer, thus removing the sand and small grit. Some strainers may have a mesh wide enough to pass small species such as *M. angasi,* which can be collected from the washings. The shells can then be sorted while wet and interesting specimens put aside. A hand magnifier and a pair of fine forceps are absolutely necessary for identifying and cleaning the shells and a low power stereomicroscope is very helpful.

Many other small shells are found during such searches, and a good collection of turrid shells *(Turridae)* is usually obtained at the same time. Some species can be collected alive from sand and under rocks at low tide level, but the taking of live specimens is generally to be discouraged. The deep water species can only be collected by the used of expensive dredging equipment, the use of which is illegal without a special permit in some states.

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# Petal-carrying by Superb Fairy-wrens

**Trevor Pescott**

On 29 August 1986, while strolling along the Stan Lewis Walk, beside the Barwon River in Highton, my attention was drawn to an adult male Superb Fairy-wren *Malurus cyaneus* which perched briefly on a clump of Phalarus, holding the orange-red skin of a boxthorn berry in his beak.

I followed him for about 50 metres, then briefly lost sight of him. Shortly after, I located him, still with the berry skin in his beak, perched close beside an adult female. When she flew away, he followed her, and I was unable to find them in the dense undergrowth.

The observation reminded me of some notes supplied in 1969 by Mrs Linda Halford of South Ecklin, near Cobden, who wrote about a male Superb Fairy-wren –

"For some years, one particular wren has intrigued us by his habit of carrying one red geranium petal or sometimes one yellow cassia petal. This is a mature male who keeps his adult plumage during the winter. Petal-carrying does not take place very often, and when it does, the wren has his head feathers slightly erected and he flies with a purpose."

On another occasion, Mrs Halford described a "rowdy chirping" of wrens in her garden with a number of birds hopping about on the lawn. She thought it was a newly-fledged family with attendants, however there were two adult males present, one of which was courting a female in the group. The second had arrived carrying a pink geranium petal in his beak, and watched the birds on the lawn for some time before flying away. According to Mrs Halford, "if human emotions could be attributed to a bird, one would call him angry or jealous."

Rowley (1965) in his paper on the Superb Fairy-wren gives no clear reason for "petal-carrying", and during his study undertaken between 1956-1960, he observed it to occur only seven times, always with a yellow petal or leaf, and in seven different months of the year.

Male Superb Fairy-wren

On one occasion, the bird presented the petal to the female, however neither then nor on any other occasion was any response noted from her. Although it may be assumed to be part of the courtship behaviour, Rowley believes because it has been observed, and presumably occurs, irregularly and rarely, it does not serve any courtship function.

Rowley does not offer an alternative reason for the behaviour and states that none of the published descriptions, nor his own records, "point to any clear tendency behind this behaviour".

Hindwood (1971) refers to several published accounts of petal-carrying and believes that it is a form of "self-advertisement", serving as an additional means to the usual posturing and plumage display in attempting to attract the attention of the female.

It is interesting to note that of petals or other objects carried, they are usually from non-indigenous plants, and many observations are made in altered environments, such as gardens, which may be carrying unusually high population levels of wrens.

I wonder whether this has caused the male, because of increased competition, to adopt a modified courtship behaviour in an attempt to establish a successful pair-bond with the female.

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# The Birds of Eastern Park, Geelong: Noteworthy Breeding Events

**Craig Morley**

Since I wrote the Birds of Eastern Park, Geelong (Morley 1983) a number of important breeding events have been recorded.

Rufous Night Heron *Nycticorax caledonicus*

"A roost in pines in the eastern area of the Park has been known to local residents since 1974" (Morley 1983).

On 20 October, 1985, I found a disused nest presumably of this species in one of the roosting trees. The nest was a flimsy saucer of sticks approximately 25 cm. in diameter, 15m. high in 2, 16-17m. *Pinus pinea*. During the year prior to this find, up to 17 birds (11 adults, 6 immatures, 20/5/85; 13 adults, 4 immatures 22/5/85) in two roosts, about 50 metres apart, were observed. However, it was more usual to observe a smaller number of adults (3-8) with one, or sometimes two, immatures. On 2 March 1985, a heavily streaked moulting immature was noted, with 2 adults.

Judging from these observations, it may be suggested that the nest was used in late 1984 – early 1985. The breeding season is from September to March, peaking between November and February (Schodde and Mason 1980). The nest in this roost tree is evidence that the Rufous Night Heron has at least attempted to breed in Eastern Park.

Australian Hobby *Falco longipennis*

The Hobby is a regular visitor to Eastern Park (Morley 1983). It is now apparent that it also resides there during some months, and a nest has been found. On 17 November 1985, I observed a bird, possibly the female, plucking a sparrow-sized and coloured bird while perched on a bare branch at a height of approximately 12 m. in an 18m. *Pinus radiata*, subsequently referred to as "the plucking tree," about 50 m from the nest tree.

On 18 September, during the 150th Anniversary Tree Planting Ceremony for schools, I heard chittering calls of Hobbies from an area of pines in the Park.

On 24 November chittering calls were heard several times from the same area of pines. On investigation I found a large nest approximately 18 m high in a 20 m *Pinus radiata*, on a slight slope with a southerly aspect.

On 30 November during a morning and an evening visit, no birds were seen or heard in or around the nest tree.

On 7 December at least one pale coloured nestling could be seen moving in the nest. The pair of Hobbies was observed in the vicinity of the nest tree.

On 14 December no Hobbies were observed.

On 27 December two fledgling Hobbies were perched in the "plucking tree". Both birds were preening and one was markedly larger. The adults were heard calling once in the distance. There were no carcases under the tree.

On 3 January 1986, one juvenile was seen and heard and at least one other bird was heard. Underneath the "plucking tree" the following items were found; 2 House Sparrow carcases (1 female, 1 juvenile) one plucked, the other not, both opened from the back; one Tree Sparrow carcase, unplucked, opened from the back; and one pellet with bright green feathers, presumably from an aviary escapee Budgerigar.

On 6 and 9 January 1986, no carcases were found under the "plucking tree", but birds were heard in the park.

On 13 January, two juveniles were observed and again the significant difference in size was apparent, indicating a male and female. An unplucked House Sparrow carcase opened from the back was found under a large *Cupressus macrocarpa* in the car park to the north of pitches 2 and 3 (see map, Morley 1983.) On this day no carcases were found under the "plucking tree."

I believe the nest used by the Hobbies was previously occupied by Australian Magpies. I base this belief on the fact, that during the 1984/85 breeding season, a pair of Magpies raised at least one clutch of 3 young in a territory that certainly included the Hobbies' nest tree and the "plucking tree". Magpies were absent from this territory in the 1985/86 breeding season when the Hobbies were active.

These observations constitute the first record of the Australian Hobby breeding in Eastern Park

### Galah *Cacatua roseicapilla*

In 1983 I stated that the Galah is an occasional visitor to Eastern Park (Morley 1983). Since then the Galah has become a more frequent visitor to the Park, and the following observations suggest that the species has at least attempted to breed.

On 17 July 1983, during a Geelong Field Naturalists' excursion, Mr. Paul Chaplin reported seeing a Galah inspecting a hollow about 10 m high in an 18 m. Sugar Gum *Eucalyptus cladocalyx* to the north of pitch 4. (see map, Morley 1983)

Mr. Ian Rogers reported a pair of Galahs going in and out of a hollow about 8 m from the ground in a Sugar Gum west of the Botanic Gardens, for a number of weeks in August-September, 1984 (Russell 1986).

On 3 January 1985, in an area to the north of pitch 5, two flocks each of eleven birds, one with 4 juveniles, and the other with 3 juveniles, were seen feeding on the ground.

On 2 March 1985, at least 50 were seen in the Park with about 20 of these being immature, and on 25 April 1985, 10, including 4 immatures, were observed opening the fallen seed cases of *Pinus pinea*.

These observations constitute the first records of Galahs attempting to breed and probably breeding, in Eastern Park.

### White-browed Scrubwren *Sericornis frontalis*

In 1983 I stated that this species was apparently very uncommon in the Botanic Gardens in Eastern Park (Morley 1983). This judgement was based on only two records of possibly the same immature bird in June and August 1982. However since then the White-browed Scrubwren has colonized the Botanic Gardens to the point where it is now a common (though not necessarily numerous) breeding resident, as evidenced by this summary of observations of the species in the Botanic Gardens from 24 October 1982 to 12 April 1986.

During 87 visits to the Botanic Gardens in this period, Scrubwrens were recorded on 53 occasions or 61% of visits. The following noteworthy observations were recorded during this 41 month period:

| | |
|---|---|
| 1983 | |
| 24 April | 1st recording of two birds. |
| 1 May | 1st confirmed record of a male and female in the Gardens. |
| 1984 | |
| 4 May | Pair present. Female responded to male's call by moving towards mate. |
| 7 October | Pair scolding in and around cactus garden. |
| 14 October | Female carrying insects and scolding in cactus garden. |
| 27 October | 1st confirmed record *two* pairs in Botanic Gardens. One pair with dependent young, territorial singing by one bird of this pair. One fledgling fed by adults. The pair with young was in the cactus garden; the other pair was in the vicinity of the fernery. |
| 1985 | |
| 25 May | Two pairs. One pair in cactus garden feeding two fledglings. |
| 1 June | Pair with two young. |
| 8 June | Pair feeding two young. |
| 15 June | One heard in natives section of Gardens mimicking Brown Thornbill. |
| 18 September | Don Francis showed me a Scrubwren's nest in a potting shed, about one metre off the floor, built between the wall and a plant. The female was scolding while bringing food in through a wall vent. The nest was vacated within a week. (Don Francis pers. comm.) |

The observation on 27 October 1984, of fledged young being fed, constitutes the first breeding record of White-browed Scrubwrens in Eastern Park since Belcher wrote "Mr. A.J. Greenfield tells me that in

1913 a pair nested in the conservatory in the Eastern Park" (Belcher 1914).

The observation of fledged young being fed on 25 May 1985 is also very interesting. The National Photographic Index volume *Wrens and Warblers of Australia* quotes breeding from July to January as do the *Readers Digest Complete Book of Australian Birds and* Frith (1976) in *Birds of the Australian High Country;* Simpson (1984) lists breeding from July to January with casual breeding in mid-May through June, and Beruldsen (1980) quotes the nesting season from June to July to November to December. In the context of this information, the White-browed Scrubwren rarely if ever breeds in autumn. However with fledged young being fed on 25 May, it seems reasonable to suggest that this breeding event began in mid-April, and covered a period which is not quoted by the major references cited above.

Brown Thornbill *Acanthiza pusilla*

In 1983 I stated that the Brown Thornbill probably bred in the Botanic Gardens. This was confirmed when Don Francis showed me a nest with young in a hanging basket approximately 3 m off the ground in the geranium exhibit. There were 3 eggs a week before, but the nest was deserted on or before 4 September 1984.

New Holland Honeyeater *Phylidonyris novaehollandiae*

In 1983 I stated that this honeyeater was an occasional visitor to the Park, which is now at times a regular and frequent visitor particularly to the school Callistemon, and a Callistemon, Banksias and Hakeas in the Botanic Gardens.

On 17 June 1985, at least one New Holland Honeyeater was seen carrying fine pieces of twig into a Pittosporum in the Geelong High School ground. A nest foundation was found at about 6 m in the 8 m Pittosporum. A week later the foundation had apparently not been added to.

On 14 September 1985, a pair was observed feeding two fledged young in a dense stand of Black Bamboo and fuchsias in the Gardens.

This is the first breeding record for the Gardens since Belcher wrote in 1914 "Now it must be almost as common as the Greenie (White-plumed Honeyeater), and breeds in numbers every year in the Park."

## Conclusion

In 1983 (Morley 1983) I listed 21 species which had been recorded breeding in Eastern Park in the period December 1979 to December 1982, and four species which probably bred during that period.

This article confirms the breeding of one of the four species, the Brown Thornbill. It reports breeding by the Australian Hobby, which has not previously been recorded breeding, and the White-browed Scrubwren and the New Holland Honeyeater, which were recorded breeding by Belcher in the period 1887-1914.

It also details records which indicate that the Rufous Night Heron and the Galah have at least attempted to breed in Eastern Park. These two species have not previously been recorded breeding.

In conclusion, since December 1979, 24 species have been recorded breeding, two species have at least attempted to breed, and three species have probably bred.

## The Birds of Eastern Park, Geelong

**Craig Morley**

This note corrects several errors made in the original article of this name (Morley 1983):

| | |
|---|---|
| Page 87 Line 4 and<br>Page 109 Line 1 | 89 not 90 species were reported. |
| Page 107 Table 2 | The Spotted Pardalote was not recorded breeding by Belcher (1914). |
| Page 113 Line 28 | The first Curator of the Gardens was Daniel Bunce. |

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# Another Sighting of Grey-crowned Babblers at Ararat

### Ray Baverstock

In October 1984 my wife and I spent our holidays at our daughter's home in Ararat, whilst she and her family were on holidays in Queensland. On Saturday morning 6 October 1984, I heard some Grey-crowned Babblers calling, and on going outside, saw a group of about eight birds in the large eucalypt in the back yard. They were having a great time, scrabbling amongst the bark in search of insects.

One bird was enthusiastically pecking away at a knot hole on a low smooth branch of the tree. On a couple of occasions another bird dropped to the ground from a low fork in pursuit of insects or grubs it had dislodged. Yet another bird was tapping away at the trunk in woodpecker style.

In the quarter of an hour or so that they were there, I was able to observe them closely. The grey crown, large white eyebrow and dark eye stripe, give them a more streamlined look than the White-browed Babbler.

The loud "yahoo" call is also very distinctive, and they do not seem to be as quarrelsome or as active as the White-browed Babbler, which we saw on several occasions at Lake Fyans.

One by one the birds gradually flew off towards the east, one or two landing on the side fence before departing. Although we were at Ararat for almost a month we did not see or hear them again. In fact in the three and a half years we have been going to Ararat, we have seen them on only two occasions, both sightings being in Anne and Richard's garden.

In a letter received from Roger Thomas, he mentioned that since "The Birds of the Ballarat Region" was published, he has learnt of a group at Castlemaine. He feels that as both the Ararat and Castlemaine groups appear to be isolated populations, their future looks rather grim.

I am intrigued to know where the Ararat birds live. Each evening I would take Deakin (a large and boisterous Airedale Terrier, whom we were babysitting), for a walk past one of the likely areas, but not once did I see or hear any of these birds.

During our holiday and also in 1983, we visited most areas around Ararat, including the Grampians, Lake Fyans, Stawell, Beaufort, Mt. Cole, Mt. Buangor, Warrack, St. Arnaud, Avoca and the Pyrenees Ranges, but did not observe any Grey-crowned Babblers.

As Anne and her family have now moved back to Melbourne to live, I suppose that for us the mystery will remain. If any reader sees or hears of Grey-crowned Babblers at or near Ararat I would appreciate hearing from them.

## ACKNOWLEDGEMENT

I am grateful to Mr. Roger Thomas for his letter informing me of other populations of Grey-crowned Babblers.

## REFERENCE

Baverstock, R. (1985) Grey-crowned Babblers in Ararat. *Geelong Naturalist* 21: 95-96.

Ray Baverstock, 13 Helena Street, Highton 3216.

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# GEELONG NATURALIST

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# GEELONG
# NATURALIST

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## Editorial

This is my last issue as Editor of the *Geelong Naturalist*: my work now takes up so much time I can no longer give the magazine the attention it deserves. Editing the magazine has been very satisfying: I've enjoyed reading all the contributions, and I hope you have too. Over the last 6 years, our writers have provided solid facts about plants, animals, and especially birds, in our area. Conservationists must be well and accurately informed if they are to influence governments and other decision-makers.

This issue contains a good example of such useful information: our second Bird Report, edited by Pat Russell, and including, as well as unusual records, notes on arrival and departure dates, and some observations on breeding, food, and behaviour. The bird observers have been our most enthusiastic writers: Ted Errey's essay may inspire writers with other special interests, to help the new editor to fill the pages with articles on the whole range of nature's wonders.

My thanks to all those who have contributed, or helped me in other ways.

Margaret Cameron

# Geelong Area Bird Report – 1985

### Patrick Russell

Great Crested Grebe – *Podiceps cristatus*

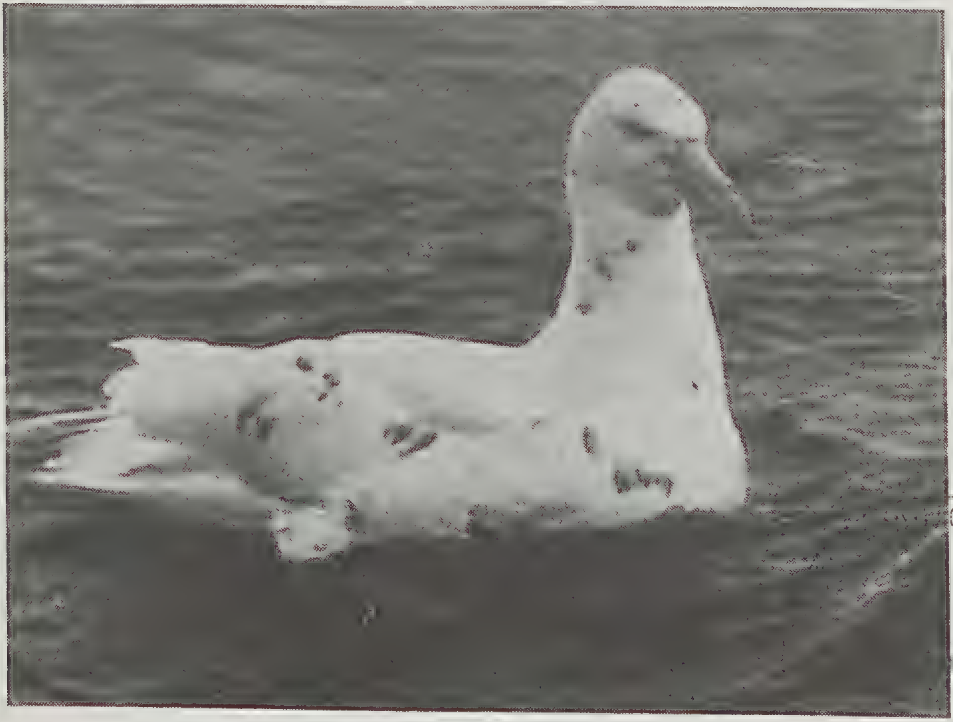
| | |
|---|---|
| 9-12, 20 December | 1 in breeding plumage at Deakin University Library lake (VD, MAC) |

Australasian Grebe – *Tachybaptus novaehollandiae*

| | |
|---|---|
| 29 June | 1 at the Institute of Educational Administration lagoon, Eastern Park. First record for this new lagoon (CM). |

Souther Giant-Petrel – *Macronectes giganteus*

| | |
|---|---|
| 27 July | 20, including one white phase, with 2 Northern Giant-Petrels at Black Rock sewage outfall (MAC) |
| 28 July | 13, including one white phase, with 1 Northern Giant-Petrel at Black Rock sewage outfall (PR, TB). |



*Southern Giant-Petrel, white phase. Photograph: M. Cameron*

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Northern Giant-Petrel – *Macronectes halli*

| | |
|---|---|
| 13 March | 1 at Marine Science Laboratories, Queenscliff (LC). |

Australian Pelican – *Pelecanus conspicillatus*

| | |
|---|---|
| 11 September | 2 nests each with two eggs at Mud Island, near Queenscliff. Three eggs later hatched but one chick died. (PMe) |
| 6 November | 2 well developed fledglings on the beach at Mud Island (PMe). |

Cape Gannet – *Morus capensis*

| | |
|---|---|
| 16 August | 1 at Wedge Light, Port Phillip Bay (AS, LC). First record after an absence of approximately two years (David Eades, pers. comm.). |

Darter – *Anhinga melanogaster*

| | |
|---|---|
| 30 October | 4 perched on dead trees in Lerderderg River, near Parwan (MH). |

Pacific Heron – *Ardea pacifica*

| | |
|---|---|
| 17 May | 2 at Deakin University Library lake (VD) |
| 7 September | At least one pair nesting at the You Yangs (TWP). Nest later abandoned (TWP, PR). |

Cattle Egret – *Ardeola ibis*

| | |
|---|---|
| 30 January – 27 October | 10 – 200 at Balyang Sanctuary (RB). For details see this issue. |
| 9 July | 202 at Belmont common (evening) (MAC). |

Great Egret – *Egretta alba*

| | |
|---|---|
| 1 June | 1 flying over Eastern Park (11.00 a.m.) and 1 feeding at the Institute of Educational Administration lagoon (12 noon). First record for Eastern Park (CM). |

Rufous Night Heron – *Nycticorax caledonicus*

| | |
|---|---|
| 1 January | 2 immatures along Barwon River at Highton (VD) |
| 11 January | 1 at Belmont Common (VD) |
| 3-10 February | 2 seen daily at Belmont Common (MAC) |
| 20 April | 1 at Balyang Sanctuary (7.00 a.m.) (RB) |
| 4 May | 1 at lower Barwon River (TWP) |
| Early Nov. | 1 at the Ocean Grove nature reserve (RH) |

Australasian Bittern – *Botaurus poiciloptilus*

| | |
|---|---|
| 4 May | 6 on lower Barwon River (TWP) |
| 30 June | 2 at Reedy Lake (MAC) |
| 4 July | 2 at Hospital Lake (GMcC) |
| 6 July | 3 at Hospital Lake (MAC) |
| 7 July | 2 at Reedy Lake (MAC) |

Glossy Ibis – *Plegadis falcinellus*

| | |
|---|---|
| 10 February | At least 16 at Reedy Lake (MAC) |
| 20 February | 12 at Reedy Lake (PR) |
| 6 July | 3 at Hospital Lake (MAC) |
| 10 November | 80 in a swampy paddock near Black Rock (TWP) |
| 8 December | 1 at Reedy lake (MAC, MH, CE, etc.) |

Royal Spoonbill – *Platalea regia*

| | |
|---|---|
| March to July | Mainly single birds, occasionally as many as 3, observed at the Institute of Educational Administration lagoon, Eastern Park. First records for this new lagoon (IR). |

Yellow-billed Spoonbill – *Platalea flavipes*

| | |
|---|---|
| 23 February | 11 at south edge of Balyang Sanctuary lake (6.45 a.m.) (RB) |
| March to July | Single birds made occasional visits to the Institute of Educational Administration lagoon, Eastern Park. The visits were less frequent than those of the Royal Spoonbill (IR). |

Magpie Goose – *Anseranas semipalmata*

| | |
|---|---|
| Early January | 3 at Reedy Lake (JL) |

Plumed Whistling Duck – *Dendrocygna eytoni*

| | |
|---|---|
| Through Nov. | Up to 6 at Gherang Road, Modewarre (JJ) |

Freckled Duck – *Stictonetta naevosa*

| | |
|---|---|
| 23 March | 6 at Lake Borrie, MMBW Farm, Werribee (MAC, MH, PR, MB). |

Pacific Black Duck – *Anas superciliosa*

| | |
|---|---|
| June to July | Several occasionally seen at the Institute of Educational Administration lagoon, Eastern Park (CM, IR). |

Grey Teal – *Anas gibberifrons*

June to July Several occasionally seen at the Institute of Educational Administration lagoon, Eastern Park. (IR)

Pink-eared Duck – *Malacorhynchus membranaceus*

November Heard calling at night over Newtown (CM)

Hardhead – *Aythya australis*

25 May Approximately 50 at the corner of Grubb and Swan Bay Roads, Wallington (PR, PM).

*Plumed Whistling-Duck. Photograph: M. Cameron*

Blue-billed Duck – *Oxyura australis*

| | |
|---|---|
| 23 March | At least 10 at Lake Borrie, MMBW Farm, Werribee. (MAC, MH, PR, MB). |
| 25 May | 4 at the corner of Grubb and Swan Bay Roads, Wallington (PR, PM.) |

Black Kite – *Milvus migrans*

| | |
|---|---|
| 4 May | 1 at lower Barwon River (TWP) |

Whistling Kite – *Haliastur sphenurus*

| | |
|---|---|
| 22 March | 1 with very pale body over Eastern Park (CM) |
| 24 March | 1 over Eastern Park (CM) |
| 5 May | 7 over Madeley Street, Ocean Grove (GT) |
| 11 May | 1 at treetop level, in Eastern Park, being harassed by 6 Australian Magpies (CM) |
| 27 August | 15 at Lake Connewarre (TW) |

Grey Goshawk (white phase) – *Accipiter novaehollandiae*

| | |
|---|---|
| 21 January | 1 at Fyansford meadows (RB) |
| 12 February | 1 at Fyansford meadows (RB) |
| 3 May | 1 at Queens Park (RB) |
| 1 June | 1 at Newtown (CM) |
| 7 July | 3 at Fyansford bridge (MAC) |

Wedge-tailed Eagle – *Aquila audax*

| | |
|---|---|
| 16 June | 3 at Ironbark Basin, near Anglesea (GMcC, GT) |
| 8 December | 2 at the corner of Flaxbourne and Norton Roads, Anglesea, one carrying a Hoary-headed Grebe in its talons (MAC, MH, CE, etc.) |

Black Falcon – *Falco subniger*

| | |
|---|---|
| 30 March | 1 at Rice Reserve, north-west of Breamlea (PR) |
| 12 April | 1 at Mt. Duneed (TW) |

Australian Hobby – *Falco longipennis*

| | |
|---|---|
| Jan. to Dec. | Recorded in Geelong and suburbs each month of the year (CM, PR, RB, etc.) |
| 8 September | Pair displaying over Connor Street, East Geelong (MAC) |
| Sept. to Jan. 1986 | Pair successfully fledged 2 young at Eastern Park (CM). For details see *Geelong Naturalist* (1987). Vol. 23, 104-110. |

Brown Falcon – *Falco berigora*

| | |
|---|---|
| 10 November | 1 flushed from the edge of the Deakin University Library lake carrying a 60 cm long snake in its talons (MAC). |

Brown Quail – *Coturnix australis*

| | |
|---|---|
| 4 July | 2 at the end of Belchers Lane, Lake Connewarre (PR) |
| 27 October | 1 female at Bald Hills Road, Anglesea (MAC, MH, LC, CE). |
| 12 December | 1 at Love's Track, Angahook Forest Park (LC) |

Lewin's Rail – *Rallus pectoralis*

| | |
|---|---|
| 25 February | 1 near the mouth of the Little River, MMBW Farm, Werribee (MAC) |
| 23 March | 1 near the mouth of the Little River, MMBW Farm, Werribee (MAC, MH, PR, MB). |

Baillon's Crake – *Porzana pusilla*

| | |
|---|---|
| 1,13,28 Mar. | 1 at Deakin University Library lake (VD, MAC) |
| 6 October | 1 at Belmont Common (TWP) |
| 15 December | Pair with 3 chicks at Deakin University Library lake Parents fed a chick with a 4 cm long fish (MAC). |
| 17, 20 Dec. | Pair with 4 chicks at Deakin University Library lake (MAC, VD) |
| 22 December | 1 adult and 1 chick at Deakin University Library lake (MAC, PR). |

Australian Crake – *Porzana fluminea*

| | |
|---|---|
| 26 January | 1 at Deakin University Library lake (MAC) |
| 7-6 March | 1 at Deakin University Library lake (VD) |
| 24 March | 1 at the Institute of Educational Administration lagoon, Eastern Park. First record for this lagoon (CM). |

Black-tailed Native-hen – *Gallinula ventralis*

| | |
|---|---|
| 2 March | 2 at Paradise Road, MMBW Farm, Werribee (LC) |
| 4 May | 1 at lower Barwon River (TWP) |
| 13 May | Approximately 10 at Lake Connewarre (GP) |
| 21 May | 1 at Point Henry (PR) |

Painted Snipe – *Rostratula benghalensis*

| | |
|---|---|
| 26 January | 1 male at Hospital Lake (BSw) |
| 16 February | 1 male at MMBW Farm, Werribee (BSw) |
| 10 Nov. to 14 Dec. | Up to 2 males at MMBW Farm, Werribee (BSw) |

Banded Lapwing – *Vanellus tricolor*

| | |
|---|---|
| 31 May | Heard calling at night over Belmont (TWP) |
| 28 June | Heard calling at night over Newtown (9.00 p.m.) (CM) |

Lesser Golden Plover – *Pluvialis dominica*

| | |
|---|---|
| 30 June | 1 in complete breeding plumage at the north end of Swan Bay (LC). |

Red-kneed Dotterel – *Erythrogonus cinctus*

| | |
|---|---|
| 27 July | 15 at Lake Connewarre (GT) |

Hooded Plover – *Charadrius rubricollis*

| | |
|---|---|
| 13 February | 2 at Urquharts Bluff – Hutt Gully (LC) |
| 23 February | 1 in the dry salt lake bed of Lake Murtnagurt, near Barwon Heads (PR) |

Double-banded Plover – *Charadrius bicinctus*

| | |
|---|---|
| 8 December | 4 at Sand Island, Queenscliff (MAC, MH, CE, etc.) |

Banded Stilt – *Cladorhynchus leucocephalus*

| | |
|---|---|
| 27 July | 75 feeding in soft mud above the water line at Freshwater Lake (MAC) |

Common Sandpiper – *Tringa hypoleucos*

| | |
|---|---|
| 16 February | 1 at Barwon River, Barwon Heads (GT, PR) |

Terek Sandpiper – *Tringa terek*

| | |
|---|---|
| 11 May | 1 at Austin's Lagoon, MMBW Farm, Werribee (LC) |

Latham's Snipe – *Gallinago hardwickii*

| | |
|---|---|
| 17 August | 4 at Belmont Common (MAC) |
| 7,22 Sept. | Approximately 60 at Belmont Common (MAC) |
| 17 November | 2 flushed from the Institute of Educational Administration lagoon (CM). |
| 24 November | 3 flushed from the Institute of Educational Administration lagoon (CM). |

Black-tailed Godwit – *Limosa limosa*

| | |
|---|---|
| 10 May | 1 in breeding plumage at Paradise Road, MMBW Farm, Werribee (PR) |

Little Stint – *Calidris minuta*

| | |
|---|---|
| 6 January | 1 in worn breeding plumage at the MMBW Farm, Werribee (BSw) |

### Gang-gang Cockatoo – *Collacephalon fimbriatum*

| | |
|---|---|
| 7-8 February | Several calling early morning at Highton (VD) |
| 24 February | Two at Belmont (TWP) |
| 2 March | Approximately 50, including 20 immature, in Eastern Park; several being harassed by an Australian Hobby (CM) |
| 9 March | Approximately 20, including 5 males, at Newtown (CM) |
| 10 March | 13, including at least 8 males, feeding on almonds in Newtown. A male was chased by an Australian Magpie-lark (CM) |
| 13 March | 10 at Deakin University (5.00 p.m.) (VD) |
| 23 April | 20 in Herne Hill (JC) |
| 28 April to 5 May | 3 at Bacchus Marsh township (MH) |
| 29 May | 8 in Highton (VD) |
| 10 July | 7 at Deakin University (MAC) |
| 20 July | Several at Fyans Park (VD) |
| 14 September | Several flying north from Highton, last record for 1985 (VD) |
| 26 October | 1 at Bacchus Marsh township (MH) |
| 5 November | 1 at Bacchus Marsh township (MH) For details of Bacchus Marsh records see *Geelong Naturalist* (1986). Vol. 23: 16-19. |

*Common Bronzewing. Photograph: M. Cameron*

Little Stint – *Calidris minuta* (continued)

| | |
|---|---|
| 5 May | 1 in fresh breeding plumage at the MMBW Farm, Werribee (BSw) |
| 11 May | 1 at Austin's Lagoon, MMBW Farm, Werribee (LC) |
| 17 November | 1 in fresh breeding plumage at the MMBW Farm, Werribee (BSw). |

Long-toed Stint – *Calidris subminuta*

| | |
|---|---|
| 24 January | 1 at Hospital Lake in half breeding plumage (FTS) |

Sanderling – *Calidris alba*

| | |
|---|---|
| 21 December | 4 at Thirteenth Beach, Barwon Heads (TWP) |

Broad-billed Sandpiper – *Limicola falcinellus*

| | |
|---|---|
| 1 February | 1 at Sand Island, Queenscliff (PR, TB) |

Oriental Pratincole – *Glareola maldivarum*

| | |
|---|---|
| 11 May | 1 at Austin's Lagoon, MMBW Farm, Werribee (LC) |

Australian Pratincole – *Stiltia isabella*

| | |
|---|---|
| 17, 18 Feb. | 1 at Moolap Salt Works (LC, DW, MAC, PR) |
| 26 February | 1 flying across the Bellarine Highway at Moolap Station Road (LC) |

Whiskered Tern – *Chlidonias hybrida*

| | |
|---|---|
| 8 December | At least 1000 at Reedy Lake (PR) |

Gull-billed Tern – *Gelochelidon nilotica*

| | |
|---|---|
| 16 February | 1 at Lake Connewarre (PR) |
| 27 October | 1 at Moolap Salt Works (MAC, MH, LC, CE) |

Peaceful Dove – *Geopelia placida*

| | |
|---|---|
| 16 June | 2 at Spring Creek, Torquay (GM) |
| 21 September | 1 at Bannockburn (RBv) |
| 15 December | 2 at Bannockburn (LC) |

Common Bronzewing – *Phaps chalcoptera*

| | |
|---|---|
| 3 March | 1 immature feeding under a pine tree in Eastern Park with 4 Spotted Turtle-Doves. First record from Eastern Park (CM) |

Yellow-tailed Black-Cockatoo – *Calyptorhynchus funereus*

| | |
|---|---|
| 15 December | 1 flying over the Bacchus Marsh township (MH) |

Long-billed Corella – *Cacatua tenuirostris*

| | |
|---|---|
| 20 April | 120 feeding with Sulphur-crested Cockatoos at Rowesley (MH) |

Sulphur-crested Cockatoo – *Cacaiua galerita*

| | |
|---|---|
| Early April | At least 4 in Eastern Park (IR) |
| 7 September | 5 at Lake Victoria (TWP) |

Musk Lorikeet – *Glossopsitta concinna*

| | |
|---|---|
| | Recorded in January, April, May and December at Newtown (CM) |
| 10 April | 1 at Banksia Court, Newcomb (PR) |
| 13 April | 3 flying over Banksia Court, Newcomb (PR) |
| 27 August | Up to 5 in Leopold (TW) |

Little Lorikeet – *Glossopsitta pusilla*

| | |
|---|---|
| 11 March | 2 flying west over Eastern Park. First record for Eastern Park (CM). |
| 6 December | 4 at Steiglitz (TWP, GMcC, GM, CM, etc.) |

Cockatiel – *Nymphicus hollandicus*

| | |
|---|---|
| 18 October | 1 at Wooloomanata, You Yangs (PR) |

Blue-winged Parrot – *Neophema chrysostoma*

| | |
|---|---|
| 6 July | 86 at Salt Swamp, Lake Connewarre (MAC) |
| 14 November | 2 feeding on the roadside at Lovely Banks (TWP) |

Elegant Parrot – *Neophema elegans*

| | |
|---|---|
| 16 June | 1 female or immature male at Ironbark Basin, near Anglesea (GMcC, GT). |

Orange-bellied Parrot – *Neophema chrysogaster*

| | |
|---|---|
| 29 June | 4 on islands at the Barwon River/Lake Connewarre delta (GT, GMcC, EB) |
| 30 June | At least 4 roosting with up to 50 Blue-winged Parrots in a Melaleuca plantation south-west of Austin's Lagoon. MMBW Farm, Werribee (PR, MB, PM). |
| 3 July | At least 2 roosting with up to 50 Blue-winged Parrots in the same place (PR, TR, JB-P) |
| Through Dec. | 1 at Sand Island, Queenscliff (JG, EP, KB). |

Fan-tailed Cuckoo – *Cuculus pyrrhophanus*

| | |
|---|---|
| 1 July | 1 heard calling in Newtown (CM) |

Shining Bronze-Cuckoo – *Chrysococcyx lucidus*

| | |
|---|---|
| 27 July | 3 at Lake Victoria (MAC) |

Southern Boobook – *Ninox novaeseelandiae*

| | |
|---|---|
| 14 September | 1 roosting in a Holm oak in the Botanical Gardens, Eastern Park, being harassed by a pair of Little Ravens (CM) |
| October | 1 in West Geelong (JW). 1 in Belmont (JP) |

Barn Owl – *Tyto alba*

| | |
|---|---|
| 7 June | 1 roosting in the leafless branches of an Elm in the Geelong High School yard. First record for Eastern Park (CM) |
| 5 July | 1 at Connor Street, East Geelong (MAC) |
| 18 September | 1 on the bridge over the Werribee River at Bacchus Marsh (MH) |

Masked Owl – *Tyto novaehollandiae*

| | |
|---|---|
| 11 January | One heard at Cressy Gully, You Yangs (LC, PP). For details see *Geelong Naturalist* (1986) Vol. 23: 20-28. |

Australian Owlet-nighjar – *Aegotheles cristatus*

| | |
|---|---|
| 18 January | 1 flushed from each of three consecutive hollow trees at the Inverleight Common (PR) |
| 20 January | 1 flushed from a rabbit burrow at the north end of East Flat, You Yangs (FTS) |

White-throated Nightjar – *Caprimulgus mystacalis*

| | |
|---|---|
| 26 January | 1 at Sapling Gully, Aeroplane Road, Brisbane Ranges National Park (LC) |

Spotted Nightjar – *Caprimulgus guttatus*

| | |
|---|---|
| 26 January | 1 at Sapling Gully, Aeroplane Road, Brisbane Ranges National Park (LC) |

Fork-tailed Swift – *Apus pacificus*

| | |
|---|---|
| 22 March | Flock of 10, with 5 White-throated Needletails over Eastern Park (CM). |
| 14 April | Flock over Stony Creek picnic ground, Brisbane Ranges National Park (MH) |

Laughing Kookaburra – *Dacelo novaeguineae*

| | |
|---|---|
| 22 November | 2 heard at Deakin University (MAC) |

Sacred Kingfisher – *Halcyon sancta*

| | |
|---|---|
| 1 January | 1 at the Barwon River in Highton (VD) |
| 7 January | 1 at a billabong on the Barwon River, upstream from Princess Bridge (VD) |

Rainbow Bee-eater – *Merops ornatus*

| | |
|---|---|
| 2-3 August | Flying over Eastern Park (GB) |

Dollarbird – *Eurystomus orientalis*

| | |
|---|---|
| 8 December | 1 at the corner of Flaxbourne and Norton Roads, Anglesea (MAC, MH, CE, etc.)<br>1 at Grass-Tree Park, Torquay (MAC, MH, CE, etc.) |

Singing Bushlark – *Mirafra javanica*

| | |
|---|---|
| 31 December | 1 at Moolap Salt Works (VD) |

Black-faced Cuckoo-shrike – *Coracina novaehollandiae*

| | |
|---|---|
| 21 April | Flock of 9 flying north through Eastern Park (CM) |

White-bellied Cuckoo-shrike – *Coracina papuensis*

| | |
|---|---|
| 8 December | 1 at Durdidwarrah (TWP, GMcC, GM, CM, etc.) |
| 27 December | 1 at Durdidwarrah (TWP) |

White-winged Triller – *Lalage sueurii*

| | |
|---|---|
| 5 October | 2 at Banskia Court, Newcomb (PR) |
| 2 November | 1 male in a Sugar Gum in Eastern Park (CM) |

Song Thrush – *Turdus philomelos*

| | |
|---|---|
| 1 January | 1 at Highton (VD) |
| 7 January | 1 singing at Newtown (4.00 p.m.) (CM) |
| January | Regularly observed at Highton (RBv) |
| 29 June | 1 singing at Newtown (5.00 p.m.) (CM) |
| 6 July | 1 singing at Newtwon (7.30 p.m.) (CM) |
| 10 August | 1 in Highton (RBv) |
| 13 November | Pair in Highton (RBv) |

Rose Robin – *Petroica rosea*

| | |
|---|---|
| 10 February | 1 adult feeding 2 flying young at Mt. Cowley, Otway ranges (LC) |
| 31 March | 1 in Eastern Park (GB) |

Flame Robin – *Petroica phoenicea*

| | |
|---|---|
| 5 October | Pair of "brown birds" with 2 newly fledged young at the You Yangs (TWP) |
| 24 November | Several "brown birds" at the You Yangs (TWP) |

Scarlet Robin – *Petroica multicolor*

| | |
|---|---|
| 8 December | Adult female feeding a juvenile Bronze-Cuckoo at the You Yangs (GMcC, LS, BS) |

Hooded Robin – *Melanodryas cucullata*

| | |
|---|---|
| 9 February | 1 female or immature at Steiglitz (LC) |
| 1 September | 1 female at West Flat, You Yangs (TWP) |
| 25 October | 1 female at West Flat, You Yangs (TWP) |
| Early Nov. | 1 male at Big Rock, You Yangs (BL) |

Rufous Whistler – *Pachycephala rufiventris*

| | |
|---|---|
| Oct. to Nov. | Pair in Eastern Park (CM) |

Black-faced Monarch – *Monarcha melanopsis*

| | |
|---|---|
| 23 February | 1 at the corner of Garvey and Sheoak Jeep Tracks, Lorne Forest Park (LC). |

Restless Flycatcher – *Myiagra inquieta*

| | |
|---|---|
| 31 January | 1 female in Belmont (TWP) |

Rufous Fantail – *Rhipidura rufifrons*

| | |
|---|---|
| 10 January | 1 at Moggs Creek, Lorne Forest Park (VD) |
| Late Feb. | Up to 3 in the Botanical Gardens, Eastern Park (GB) |
| Through March | 1 at Wallington (JA) |
| 13 April | 1 at Lerderderg Gorge, Bacchus Marsh (MH) |
| 7 December | 1 active and vocal bird chasing European Greenfinch and a Blackbird in the Botanical Gardens, Eastern Park (CM). |

Willie Wagtail – *Rhipidura leucophrys*

| | |
|---|---|
| 3 January | 1 with sandy coloured plumage at North Geelong (TWP) |
| 2 March | 1 albino at Paradise Road, MMBW Farm, Werribee (LC) |
| 22 April | 1 with "almost white" plumage at Moriac (AB) |

Spotted Quail-thrush – *Cinclosoma punctatum*

| | |
|---|---|
| 18 January | 2 at Bald Hills Road, Anglesea (MAC, PR) |
| 9 March | Pair at "The Canyon", Lorne Forest Park (LC) |

Little Grassbird – *Megalurus gramineus*

| | |
|---|---|
| 17 December | 1 catching moths in cut grass and weeds 10 m from the Deakin University Library lake, and taking them back to the reeds (MAC). |

Superb Fairy-wren – *Malurus cyaneus*

| | |
|---|---|
| 12 to 29 Jan. | Pair with 2 juveniles reglarly visiting a Newtown garden (CM) |
| Mid February | Pair with at least 1 juvenile in Newtown garden (CM) |
| 28 March | Pair in Belmont garden (RB) |

Southern Emu-wren – *Stipiturus malachurus*

| | |
|---|---|
| 12 December | 1 at the corner of Bald Hills and No. 2 Roads, Anglesea (LC) |

Rufous Bristlebird – *Dasyornis broadbenti*

| | |
|---|---|
| 12 December | 1 at the corner of Bald Hills and No. 2 Roads. Anglesea (LC) |

Chestnut-rumped Hylacola – *Sericornis pyrrhopygius*

| | |
|---|---|
| 12 January | 2 at Bald Hills Road, Anglesea. First record here since fires of 1983 (MAC) |

Speckled Warbler – *Sericornis sagittatus*

| | |
|---|---|
| 8 December | Pair nesting at Seiglitz (GMcC, TWP, GM, CM, etc.) |
| | 1 at Durdidwarrah (GMcC, TWP, GM, CM, etc.). |

Western Gerygone – *Gerygone fusca*

| | |
|---|---|
| 26 January | 1 at Sapling Gully, Aeroplane Road, Brisbane Ranges National park (LC) |

Brown Thornbill – *Acanthiza pusilla*

| | |
|---|---|
| 23 March | 2 at Belmont (TWP) |
| 5 May | 1 at Belmont (TWP) |
| 11 May | 1 heard 100 m north of Botanical Gardens, Eastern Park. All previous records have been within or at the Botanical Gardens boundary (CM). |
| 1 June | 1 in Botanical Gardens, Eastern Park, agitated by the close approach of a pair of White-browed Scrubwrens, was heard mimicking a Blackbird, a Grey Fantail, and a Yellow-rumped Thornbill (CM). |
| 27 July | 1 in the Botanical Gardens, Eastern Park, heard mimicking a Blackbird, a Common Starling, a Silvereye, and a Song Thrush (CM) |

Yellow Thornbill – *Acanthiza nana*

| | |
|---|---|
| January | Regularly observed at Highton (RB) |
| 20 May | 2 in a Crabapple tree in Newtown garden (CM) |
| 6 September | 4 at Connor Street, East Geelong (MAC) |

Red Wattlebird – *Anthochaera carunculata*

| | |
|---|---|
| 21 April | 35 in a loose flock flying north through Eastern Park (CM) |
| 4 May | Approximately 60 in a loose flock in Eastern Park (CM) |
| 12 May | Approximately 40 in a large Sugar Gum in the Botanical Gardens, Eastern Park (CM) |
| 8 June | More than 100, including some bathing, in Eastern Park (CM) |

Spiny-cheeked Honeyeater – *Acanthagenys rufogularis*

| | |
|---|---|
| 26 April | 2 at Belmont common (GMcC) |
| 6 July | 9 in a Boxthorn shrub at Lake Murtnagurt (MAC) |
| Through Sept. | 1 in a Leopold garden (TW) |

Blue-faced Honeyeater – *Entomyzon cyanotis*

| | |
|---|---|
| February | 1 regularly seen in Ocean Grove (RH) |

Yellow-faced Honeyeater – *Lichenostomus chrysops*

| | |
|---|---|
| 8 April | 4 flying north through Eastern Park, earliest record for 1985 (CM) |
| 13 April | Flocks of 20 to 50 flying through Lerderderg Gorge, Bacchus Marsh (MH) |
| 21 September | Last record for Eastern Park (CM) |

Singing Honeyeater – *Lichenostomus virescens*

| | |
|---|---|
| 17 Sept. to 17 Nov. | Several seen regularly in Orton Street, Ocean Grove (GT). |

Black-chinned Honeyeater – *Melithreptus gularis*

| | |
|---|---|
| 11 January | 1 at East Flat, you Yangs (LC) |
| 9 February | 2 at East Flat, You Yangs (LC) |
| 6 April | 2 at East Flat, You Yangs (LC) |

White-naped Honeyeater – *Melithreptus lunatus*

| | |
|---|---|
| 9 April | Heard in Newtown. Several in Eastern Park. Earliest records for 1985 (CM) |

White-naped Honeyeater – *Melithreptus lunatus* (continued)

| | |
|---|---|
| 20 May | Flocks flying through Eastern Park, approximately 100 (10.13 a.m.), 30 (10.47 a.m.), 100 (10.51 a.m.), 150 (11.04 a.m.) (CM) |
| 11 August | Flock of 10 with several Yellow-faced Honeyeaters in the Botanical Gardens, Eastern Park; last record for 1986 (CM) |

Painted Honeyeater – *Grantiella picia*

| | |
|---|---|
| 8 December | 1 at Steiglitz (TWP, GMcC, GM, CM, etc.) |

Crescent Honeyeater – *Phylidonyris pyrrhoptera*

| | |
|---|---|
| 17 Aug. to 21 Sept. | 1 male in flowering Japonica in Bacchus Marsh (MH) |
| 9 November | 1 with flying young at Bald Hills Road, Anglesea (MAC) |

Mistletoebird – *Dicaeum hirundinaceum*

| | |
|---|---|
| 11 March to 12 May | Heard in Eastern Park on 6 occasions (CM) |

Spotted Pardalote – *Pardalotus punctatus*

January, February, March, April, May, October, November, December. Observed in Newtown (CM).

| | |
|---|---|
| 22 March | Flock of 15 moving through Eastern Park (CM) |
| 24 March | Flock of 9 moving through Eastern Park (CM) |
| 13 April | Flock of 12 moving through Eastern Park (CM) |

Striated Pardalote – *Pardalotus striatus*

| | |
|---|---|
| | January, September, October, December. Recorded in Newtown (CM). |
| 9 November | At least 5 pairs nesting in a culvert of three concrete pipes under Gundry's Road, Torquay. The nests were in the soil covering the pipes, and the adults entered the nests by way of holes in the top of the pipes (MAC). |

Silvereye – *Zosterops lateralis*

| | |
|---|---|
| 25 April | Approximately 20 flying north in Eastern Park (CM) |
| 4 May | Very common in Botanical Gardens, Eastern Park. 3 flocks of 12-15 flying north over Eastern Park (CM) |

| | |
|---|---|
| 5 May | Loose flock of 30 in Eastern Park (CM) |
| 11 May | Many Tasmanian birds in Eastern Park (CM) |
| 12 May | Small flock flying north through Eastern Park (CM) |
| 18 August | Flock of at least 40 in Botanical Gardens, Eastern Park (CM). |

House Sparrow – *Passer domesticus*

| | |
|---|---|
| 22 September | Several feeding on flying ants in a casuarina tree, East Geelong (MAC) |

Olive-backed Oriole – *Oriolus sagittatus*

| | |
|---|---|
| 18 June | 1 in Belmont garden (GMcC) |
| 6 Aug. to 16 Nov. | Heard calling almost daily in Belont (GMcC) |

Satin Bowerbird – *Ptilonorhynchus violaceus*

| | |
|---|---|
| 22 August | 1 male with a bower in the Anglesea township (MW) |

White-browed Woodswallow – *Artamus superciliosus*

| | |
|---|---|
| 18 October | 5 at West Plantation, You Yangs (PR) |

Pied Currawong – *Strepera graculina*

| | |
|---|---|
| 1 January | 1 at Highton (VD) |
| 10 March | 2 adults and 1 juvenile at Highton (VD) |
| 13 April | 15 at the mouth of the Lerderderg Gorge (MH) |
| 14 April | Heard at Highton (VD) |
| July to Aug. | Up to 8 in Highton (RBv) |
| July to Dec. | 2 at Point Lonsdale (WB) |
| 18 July | Several in Highton (VD) |
| 2 September | Heard at Highton (7.00 a.m.) (VD) |
| 20 October | 1 at Newtown (CM) |
| 22 Nov. to 17 Dec. | At least 1 at Deakin University (MAC) |
| 3 December | Several at Highton (VD) |

Australian Raven – *Corvus coronoides*

| | |
|---|---|
| 8 December | At least 1 heard at corner of Flaxbourne and Norton Roads, Anglesea (MAC, MH, CE, etc.) |

**List of Observers**

| | |
|---|---|
| JA | Judy Allen |
| MB | Mat Baars |
| RB | Rolf Baldwin |
| KB | Kevin Bartram |
| AB | Ann Bath |
| GB | Grant Baverstock |
| RBv | Ray Baverstock |
| TB | Thornton Borbidge |
| WB | Wendy Borrie |
| EB | Eric Bound |
| JB-P | John Bowden-Perry |
| MAC | Margaret Cameron |
| JC | Jess Collins |
| LC | Lawrie Conole |
| VD | Valda Dedman |
| CE | Chris Eastwood |
| JG | Jeff Gilligan |
| MH | Marilyn Hewish |
| RH | Ray Hodge |
| JJ | John James |
| JL | John Long |
| BL | Bev Lyon |
| GM | Glen McCarthy |
| GMcC | Gordon McCarthy |
| PMe | Peter Menkhorst |
| PM | Paul Moore |
| CM | Craig Morley |
| PP | Paul Peake |
| GP | Graeme Perkins |
| TWP | Trevor Pescott |
| JP | Jenny Possingham |
| EP | Eric Pozzo |
| TR | Tim Reid |
| IR | Ian Rogers |
| PR | Pat Russell |
| BS | Bob Sherwood |
| LS | Lily Sherwood |
| FTS | Fred Smith |
| AS | Andy Stephens |
| BSw | Bob Swindley |
| GT | Graeme Tribe |
| JW | Joyce Ward |
| DW | David Whelan |
| MW | Mary White |
| TW | Tim Wilson |

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Pizzey, Graham (1980). *A field guide to the birds of Australia.* Collins, Sydney.

Patrick Russell, 16 Banksia Court, Newcomb, 3219.

# Geelong Field Naturalists' Club President's Report 1986-87

It gives me great pleasure to report on a very full, and on the whole, a very satisfactory year of Club activity. Excursions and general meetings have been very well attended, a variety of conservation issues have been addressed and Club organisation and management have gone through a process of revision which should lead to our Incorporation in the near future.

At general meetings we have had some outstanding speakers who covered a wide range of topics: Central Australian plants by Budge Bleakley, aborigines of the Geelong area by Gary Presland, mammals on roadside remnants by Andrew Bennett, cinnamon fungus in the Brisbane Ranges by Gretna Weste, Swan Bay by Henry Hudson and Stan Strother, lizards by Peter Tremul. David Baker-Gabb gave us new insight into indentifying raptors, and Nicolas Day brought in some of his fine original paintings when he explained the art of bird illustration. Ron Rixon introduced us to the Werribee River at the Members' Night in December. The other Members' Night took the form of a Show and Tell evening.

General meetings provide members with the opportunity to pass on observations and some interesting items were recorded, such as a Leopard Seal at Ocean Grove, Glossy Ibis at Reedy Lake, an undescribed spider orchid at Inverleigh Common, a large group of Orange-bellied Parrots (perhaps one-sixth of the world's population) and a rare Ground Parrot at Lake Connewarre. These last two observations were made by members taking part in a winter wader count.

Ted Errey has been the main provider of material for the specimen table. His displays of rushes and sedges, plants of the Brisbane Ranges, and various spiders have been greatly appreciated. I urge everyone to bring along items of interest, unusual or common; they all add to the sum total of natural history records of our district.

Excursions took us to Sherbrooke Forest (by bus), and to Belcher's bushland, the Ocean Grove Nature Reserve, Bamganie bush, the Ingliston Gorge, Bellarine Peninsula, Anglesea, Stevenson's Falls and Lake Elizabeth in the Otways, Swan Bay and the Brisbane Ranges.

Although the Australia Day weekend campout had to be cancelled because we could not obtain a suitable residential venue, the campouts to Mt. Eccles/Lake Condah and to Snake Island were a spectacular success, as was the "extra" campout to Mt. Cole to view Halley's Comet. The comet itself was disappointing, but the campout provided the opportunity for mammal spotlighting and birdwatching.

We slotted in another "extra" activity in November, when we made a boat trip to Reedy Lake to view the Ibis nesting colony. Accompanied by officers from the Department of Conservation, Forests and Lands, we were able to experience at first hand the sight, sound and smell of this extensive colony.

The theme for World Environment Day in June was "wetlands", so we conducted a birdwatch at Belmont Common, where we were joined by fourteen disabled children and their teachers from Shannon Park.

In August we held a koala count at the Bannockburn Bush as our contribution to the Koala Conservation program. Seventeen healthy koalas were sighted.

I would like to thank the organisers and leaders of all these events, and especially Graeme Tribe, whose initiative led us to scheduling the two "extras".

We have continued our boneseed eradication work at the You Yangs. Two "pull" weekends were arranged, and our work was followed up by a group of Australian Trust for Conservation Volunteers whom we employed for a week in October, to great effect. The You Yangs project is an ongoing one; we have been involved for more than twenty years. It has been successful, and although the task ahead of us is still formidable because of the sheer size of the problem, we will continue to consolidate our area at the Saddle, consulting with the Department of Conservation, Forests and Lands on a complementary spray program. Our working bees last year showed the same team spirit and enthusiasm of earlier years. My thanks go to Trevor Pescott for his leadership of the project.

Some mammal survey work at Moggs Creek was done by Dave King during the past twelve months as part of our post-fire regeneration survey. Other observations have not been followed up. We need to make an effort to have surveys of all aspects and collate the information for final publication.

The Botany Group conducted study evenings and field excursions in the first part of the year, and recently members have been active assessing vegetation values along the roads of Corio and Bannockburn as part of a Roadside Conservation Survey being conducted by the Department.

Bird Group meetings are always well attended and topics covered included lorikeets, barn owls, little brown birds, birds of Swan Bay and the Gulf of Carpenteria. Members have taken part in field surveys to count waders, Orange-bellied Parrots and Hooded Plovers. The two-year post-fire survey of the You Yangs has been completed and the results will soon be to hand.

On the conservation front the Club has been very active. Detailed submissions were prepared on the LCC Proposed Recommendations Melbourne Area District 1 Review, the Flora and Fauna Guarantee, the Draft Wetlands Conservation Statements, the Wurdee Boluc Enlargement, the Save the Lake Connewarre Committee report, the Lonsdale Lake Development, Jobs in East Gippsland and the Museum Development Study. We were represented at the appeal against the siting of clubrooms close to the Barwon River at the King Lloyds Reserve, which resulted in the plan being amended to our recommendations. We have also made representations to the relevant authorities about Sand Island at Queenscliff, Belcher's bushland, Freshwater Lake and land adjoining the Barwon River.

The Committee has met regularly with officers from the Department of Conservation, Forests and Lands. This is a great way of finding out what goes on (and doesn't!) in the Geelong Region, Dr. Graeme Suckling, the Assistant Regional Manager, Resource Conservation, has been most helpful in providing answers to our queries.

The Conservation sub-committee also met with representatives of the Barwon Valley Waterski Club and we reaffirmed our opposition, on environmental grounds, to power boating on the Barwon River.

We have given advice to South Barwon Council on display boards at Grasstree Park, and we met with engineers involved with the new Barwon River crossing to ensure that the Belmont Commong wetland would not be endangered during the construction process.

The Club is represented on several outside committees of management – the You Yangs, the Inverleigh Common, the Ocean Grove Nature Reserve and the MMBW Wildlife Conservative Committee. A member of the Club is the conservation representative on the Regional Land Protection Advisory Committee. Members attended the Orange-bellied Parrot Recovery team meeting and a Seagrass seminar at Deakin University. We were represented at several WVFNCA campouts but have not otherwise been active in that Association's activities.

It has been a pleasure to work with the Committee over the past twelve months, and I thank them for their support, especially Roy Whiteside, the Secretary.

The library's stocks have increased through the regular receipt of various natural history journals and by donations from members. Tonight we add "Shorebirds in Australia" in memory of former Committee member, John Bowden-Perry. Leila Ramsay organises the material in the library and the loans, and I thank her and Betty Moore and their helpers for the work they do in this respect.

Those responsible for the trading table are again to be commended for their work in providing a small but regular source of income.

We purchased a large electric urn so that a hot drink could be more easily supplied at the conclusion of general meetings when we hoped to build up a more social atmosphere. We took the opportunity of upgrading our amplifying equipment when we had to replace that stolen from our cupboard at St. David's hall. A storage and security problem remains, and we are investigating whether we should change our meeting venue. In any event we need improved facilities to make our meetings more comfortable and easier to organise.

The excursion record book has become a valuable source of natural history information and we should make a concerted effort to publish some of it in the *Geelong Naturalist*. Some fine scientific articles have been published in the magazine over the past year, but there has been a scarcity of brief notes. Please consider jotting down a few lines when you find something of interest and submitting them to the editor. There need be no blank half pages in the *Naturalist*.

Our book about the Barwon River in Geelong will be published in the near future; it is currently with the printer. I believe you will find it both interesting and attractive and well worth the effort involved.

The book is partly funded by a government grant. We have just this week received another such grant, of $1200, for a pamphlet on the natural history of the Belmont Common, so that will be our next task in the publication field.

We celebrated our twenty-fifth birthday with a barbecue at the Ocean Grove Nature Reserve. Several of our founding members were present as well as the newest – seven-month-old Claire Bard-Brucker. Now we are about to begin a new era, for tonight we have voted to accept the new Statement of Purpose and Rules of the Club as an incorporated body. When this becomes a reality, our official name will be slightly longer but our aims will remain the same though spelled out a little more fully.

Over the past twenty-six years the Club has grown and developed and has achieved a high standing in the community, where interest in natural history and conservation has increased. We have become more efficient and more involved in conservation issues. However, we must be careful to preserve a sense of wonder and the simple enthusiasm of the early naturalists.

A club as large as ours and as diverse in its activities requires a great deal of organisation, and as in most similar associations management is carried out by only a few persons. It disturbs me, however, that we are not filling the gaps on the Committee and there is nobody willing to step into the President's shoes.

I have just reported on a year of high achievement, yet I end on a note of disquiet. We appear to be a vigorous organisation, but unless we have enough members willing to take on the responsibility of running the Club, we are likely to fade away.

I do not want to be a prophet of doom and gloom. The Geelong Field Naturalists Club is a good club. Let us work together to keep it that way.

Valda Dedman
President

# Treasurer's Report 1986-87

This year our payments exceeded our receipts by $1,231.86.

Our income from subscriptions was marginally more than last year (an extra $48.50). Among other sources of income were a very welcome donation of $343.75 from the South Barwon Recreational Voucher Scheme, proceeds of our trading table ($213.53), donations from members ($85.00), sale of recipe books ($14.00), raffle ($46.50), and sale of T-shirts ($16.50). Sale of the booklet *The Care of Sick, Injured, and Orphaned Native Birds and Animals* by the late Jack Wheeler, brought in $299.10, and our Sherbrooke Forest bus trip being well supported provided a $55.00 profit. We received $214.90 insurance following the theft of our amplifier and microphone. This year we made our money work harder for us; amalgamating our accounts last year made it easier to invest the larger amount of money at a higher rate of interest. This year $10,000 from our deposit stock, of $12,400 at the end of the last financial year, was invested in term deposits.

Our printing and stationery costs have risen markedly this year ($4,060.10 compared with $1,440.0 last year). This startling increase is modified when we see that we had two large accounts from one of our suppliers this year, and none last year. The increase is none the less quite considerable. $500.00 which was donated by the Bird Environment Council last year, was used to build the bird hide at the Ocean Grove Nature Reserve. We paid $346.98 to the Australian Trust for Conservation Volunteers for labour connected with pulling boneseed at the You Yangs. The major equipment purchased this year was a tripod ($75.00), our new amplifier and microphone at $379.90 ($214.90 from insurance plus $165.00 from Club funds), and an urn for our supper coffee ($67.34). We made no donations of support to appeals this year.

We must note that inflation affects us all. The Club has had no increase in subscription rates since 1983. We are not a profit making organization, but we must remain a viable Club being able to maintain a suitable standard of equipment and accommodation facilities, and to be able to contribute to worthy causes in our field. I think we must consider at least a moderate increase in subscription rates this year.

Sincere thanks to Mr Barry Redman for once again auditing our books, and to Mrs Joy Pearce for her assistance.

Diana Primrose
Honorary Treasurer

## Geelong Field Naturalists' Club – Receipts and Payments Account for Year ended 23rd February, 1987.

| Receipts | |
|---|---|
| Subscriptions | $2,458.50 |
| Donations | 497.89 |
| Interest | 1,593.46 |
| Sale of publications | 838.60 |
| Trading Table | 213.53 |
| Excursions | 1,330.00 |
| Fund Raising | 62.10 |
| Insurance | 214.90 |
| Sundries | 78.71 |
| | 7,287.69 |
| TFR from deposit stock | 1,400.00 |
| | 8,687.69 |
| Cash book balance at 27/2/86 | 1,631.03 |
| | $10,318.72 |

| Payments | |
|---|---|
| Printing & Stationery | $4,060.10 |
| Postage | 540.38 |
| Insurance | 178.70 |
| Club subscriptions | 319.00 |
| Purchase – equipment | 570.54 |
| Purchase – publications | 147.20 |
| Excursions | 1,270.00 |
| Bird hide OGNR | 500.00 |
| Use of hall | 330.00 |
| Work on You Yangs | 346.98 |
| Sundries | 256.65 |
| | 8,519.55 |
| Cash book balance at 23/2/87 | 1,799.17 |
| | $10,318.72 |

| | | |
|---|---|---|
| Deposit Stock Balance | 25/2/86 | $12,400.00 |
| TFR to Term Deposit | 26/3/86 | 10,000.00 |
| | | 2,400.00 |
| TFR to Cheque Account | 5/2/87 | 1,400.00 |
| Balance Deposit Stock | 23/2/87 | $1,000.00 |
| Term Deposit at | 23/2/87 | $10,000.00 |

# Towards the Second 25 Years

**Ted Errey**

Since its beginning a quarter of a century ago as the brainchild of Trevor Pescott, the Geelong Field Naturalists Club has grown to be an important body in the areas of natural history and conservation.

The example set by the founder and early fellow enthusiasts meant that much knowledge was passed on to the general membership, encouraging many, both young and not so young, to begin some study of their own. With the number of members reaching and passing the 400 mark, the range of interests was very wide. Perhaps it was to be expected that birds and plants held the greatest attraction – no doubt this is so in most societies of this type.

But there are so many fascinating avenues for exploration in the world of nature, and none of them can be completely isolated from the others. These avenues may radiate from a central point. For example, one avenue may lead from a bird we find to the insects it eats, its method of catching them, how it feeds them to its young, while another suggests a study of the nest materials, other types of nests, nesting places and nesting behaviour. A different avenue takes us to the tree in which it lives or nests. Another leads us to examine the bird's environment, the terrain, and perhaps geological topics.

On the other hand, our avenue may lead to a freeway which discourages diversions, and continues in a more or less straight line away from the starting point. From the bird we are attracted to the tree and its own characteristics, the animals on or in its branches, borers in the wood, the bark texture, beetles and spiders under the bark, web-spinning, other spinners of webs, other animal structures. And so the line of exploration extends.

Understandably we can't pursue all these courses of investigation. But we are *field* naturalists, and our field should not be narrowed by four walls, or even side fences. Worse still would be to restrict our interest in nature to our bookshelves and television programmes, helpful as these can be on occasions. Nature is around us every day of the month, not only on the first Tuesday. Whether we are pruning apple-trees, collecting wood for the fire, or sweeping cobwebs from the window corners we are likely to be confronted with some interesting facet of nature.

Speaking of cobwebs, how many spiders can you put a name to? How many can I? Far too few, I'm afraid. The red-back, of course, and the huntsman. And the orchard or bird-dropping spider is fairly well known. For those who shudder at the sight of these creatures – and many keen naturalists do – there are the tiny harmless flower-spiders, and the jumping spiders. These are not single species, but whole families. Finding and identifying even the family to which a specimen belongs gives considerable satisfaction. There are many beautiful spiders among them, some only a few millimetres long, so a hand lens will be needed for an inspection. And if it's a jumping spider you have found, don't be surprised if it jumps on to your lens, as if to examine its examiner!

Other families we can sort out, too, if we care to spend a little time and effort. Separate genera or even species may be identified. Here a book will be needed, but don't expect common names except for a few conspicuous types. There are nearly 40 families of spiders in Australia, so we can ignore trap-doors, funnel-webs and red-backs, and still have plenty left to study. And spiders have been around a long time, over 300 million years, compared with our meagre one million or less.

Other joint-legged animals, or arthropods, the insects, are much more numerous. These do not have to be searched for. Unfortunately all too many of them search for us, often much to our discomfort. But the insect world has numerous useful inhabitants as well as pests. Even some of those which might be considered pests in their early stage of life, can become gorgeous butterflies when they reach their final development.

The fields of study in the vast insect world are too obvious and too numerous even to begin listing, but the beetle section is one that I know much too little about.

Other arthropods are to be found during our seaside visits. The crustaceans include such widely differing creatures as crayfish, barnacles, and the much too common slaters and pillbugs. Crabs in the sea and shrimps and their relations in the river are all worth a little of our time.

And while we're at the sea, what remarkable variety we find there!

First the seaweed and shells washed up on the sand. If we are lucky, a dotterel or two scurrying along the beach and gannets and terns beyond the breakers will relieve the monotony of the ever-present silver gulls.

In the rock pools, living seaweeds in great variety provide food and shelter for the different inhabitants. These also vary, in size, shape and colour. Even their rates of movement vary, from the almost imperceptible glide of molluscs and sea-stars, to the flash of tiny fish too fast for the eye to follow. The massed seaweed growth protects not only the creatures in the pool but also the shore itself from erosive action of waves and tides.

Cliff-face and sand dune tell stories of their own, the former with its ancient rock strata and perhas even fossils, the latter with more recent information concerning the never-ending battle between sea and land. This is a battle in which prevailing winds play a significant part, aiding sometimes one side and sometimes the other. Along many parts of our coastline Aboriginal middens are to be found, and again the winds have an influence, here laying the shell beds bare, there covering them deeply in sand drift. Both cliff and dune are worth inspecting too for botanical interest, for in plants the land forces have a staunch ally in their perpetual struggle. Some of these plants are indeed front line troops, having to contend with salt-laden winds and mists as well as the abrasive effect of flying sand.

Mammals are another section of the animal world worthy of study with whatever degree of intensity seems appropriate to the individual. While most native mammals in the district are nocturnal – gliders, possums, bush rats, phascogales – others may frequently be seen abroad during the daytime. The echidna, for example, is sometimes met quite unexpectedly, though its work in digging for ants and termites is seen during most bushland walks. Wallabies and kangaroos allow us a much more fleeting observation, but koalas are almost always on view at such places as the Stony Creek picnic ground north of Anakie, and they make no effort to escape inspection.

Mammals, though, are not restricted to terrestrial or arboreal habitats. A number have taken to the water. But the platypus and water-rat permit us only a very rare and very brief glimpse if we are lucky enough to see them at all. Sea mammals are more common, but though they may frequently be seen, seals, dolphins and whales are strictly for distant viewing only. Bats, the only mammals that have taken to the air, are common enough, but because of their nocturnal habits and swift flight they are not often seen. They are just as interesting as bush-rats and phascogales, their approximate equivalents in size among the ground dwellers, but even campers at club weekends rarely see them, for they are not captured by the usual mammal trapping processes.

These camping weekends introduce us to two approaches to nature very different from the usual daytime excursions. The mammal trapping just mentioned involves the capture of small animals in cage traps, under permit from the appropriate authorities, naturally. The mammals, if campers are fortunate, are inspected, photographed, measured and released again in their own territory, none the worse for a few hours in a metal cage. The other activity allows campers a more or less distant view of an animal otherwise not often seen. This is spot-lighting, which requires powerful torches or a portable spotlight to show up possums, gliders and other nocturnal creatures during their night time wanderings, usually high overhead. A number of our members have been involved in detailed investigation of the local mammals for some years, and their valuable work is regularly recorded in this magazine.

After-dark studies around camps may also introduce members to luminous fungus, especially if the camp is in the damper forests of the district. The sight of this almost ghostly fungus at the side of the track can be slightly alarming at first, but if it leads to a wider interest in fungi generally, any initial apprehension will be well worth while. And a number of these fungal fruiting bodies are tasty delicacies, though you should know which is which before placing them in the frying pan! In similar territory, glow-worms can be expected, providing yet another facet during our night-time walk.

Lights of a vastly different character may attract attention on field camps, but a study of the skies and their fascinating pin-points of light is best done away from the overhead cover of rain forests, and usually at a time when fungi, ghostly or otherwise, are less likely to distract.

During the warmer seasons, various reptiles are likely to come under notice. Though many people will place these lower on the popularity scale than spiders, there are a number of harmless types such as small skinks and geckos, as well as the larger bluetongues, dragons and shingle-backs, that are not only fascinating to study, but are in most cases beautifully patterned. As for their less-appealing venomous brethen, a watchful eye and a pair of rubber boots are effective safeguards wherever they are likely to be met, though snakes, and troublesome insects and spiders, are all an integral part of nature.

We humans too are essentially a part of nature on this planet. The greater our understanding of the natural environment, the easier it will be for us to live in harmony with it, and the more complete we will find life to be.

E.G. Errey, 3 Leonard St., Belmont, 3216.

## Cattle Egrets at Balyang Sanctuary

### Rolf Baldwin

Cattle Egrets *Ardeola ibis* were counted at Balyang on 15 occasions between 30 January and 27 October 1985. Numbers fluctuated between 10 and 200. Breeding plumage was first noted on 10 September. Numbers are approximate.

| | |
|---|---|
| 30 January | 10 at Balyang Sanctuary (6.30 a.m.) |
| 16 February | 40 flying south from Balyang Sanctuary (6.50 a.m.) |
| 17 February | 40 flying from Balyang Sanctuary (6.50 a.m.) |
| 8 March | 50 at Balyang Sanctuary two hours after sunrise (8.15 a.m.) |
| 9 March | 50 flying from Balyang Sanctuary (7.00 a.m.) |
| 24 March | 40 at Balyang Sanctuary (6.40 a.m.) |
| 20 April | 50 flying from Balyang Sanctuary (7.00 a.m.) |
| 23 June | Clear sky, none at Balyang Sanctuary (7.15 a.m.) |
| 25 June | Overcast, 53 at Balyang Sanctuary (7.15 a.m.) |
| 11 July | 200 flying from Balyang Sanctuary (7.15 a.m.) |
| 25 July | 200 flying from Balyang Sanctuary (7.10 a.m.) |
| 31 August | 100 at Balyang Sanctuary (6.50 a.m.) |
| 10 September | 200 at Balyang Sanctuary, some with breeding plumage (6.30 a.m.) |
| 1 October | 200 at Balyang Sanctuary, many with breeding plumage (5.40 a.m.) |
| 27 October | 50 flying from Balyang Sanctuary (6.15 a.m.) |

Rolf Baldwin, 2 Kyle Ave., Belmont, 3216.

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# GEELONG NATURALIST

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# Editorial

With this issue the Geelong Naturalist is in the hands of an Editorial Committee. Valda Dedman, Ted Errey, Dave King and Gordon McCarthy have been regular contributors, and all have been, or still are, involved with the policy and decision-making of the Club. We hope to continue the high standard set by previous editors, Trevor Pescott and Margaret Cameron.

This time we go some way towards catching up on the recording of Club activities, with accounts of a recent campout and excursion and a report of mammals at Moggs Creek, part of our post-fire survey. The Club has been collecting information about the natural history of the Geelong region since it was formed; for the past eighteen months we have been diligent about entering it in an excursion book (the "black' book), but we have not published a great deal recently although it has always been our resolve to do so.

Two articles reflect Ted Errey's wise words in the May Naturalist that "nature is around us every day of the month". Gordon McCarthy advises us to put on our coats and get outside to see what we can find. Betty Quirk's notes on Victorian heaths are a follow-on from her mini-talk given at the July general meeting, and illustrate that a great deal of knowledge is to be gained by taking part in field naturalist excursions.

Betty's introduction also reminds us that the natural landscape and attitudes to flora and fauna have changed over the past fifty years. How much heath is there to be seen in the Melbourne suburb of Cheltenham today? And how many of us would dare gather an armful of Victoria's floral emblem?

The Victorian Flora and Fauna Guarantee Bill which the government hopes to introduce in the spring session of Parliament will, if it goes through, go some way to protecting and preserving habitat and individual species. Part of the legislation will establish a database on flora and fauna, and this is where the GFNC can have a role. Information we record in our magazine may be appropriate for that database, and may help to save part of our natural environment, if not now, perhaps fifty years hence. Who knows when information about Anglesea heaths and heathland birds may be needed to ensure their survival?

Valda Dedman

# Further Post Wildfire Study Of The Moggs Creek Area

**Dave King**

### Introduction

Another opportunity arose to spend some time at the Guide Camp, "Tallawalla", situated adjacent to the G.F.N.C. study area following the Ash Wednesday wildfires. The period was from the 23rd to 26th August, 1986.

Weather conditions varied from fine to wet with temperatures ranging from lows overnight of around 8°C to daytime maximums of up to 19°C.

Immediate impressions were of a brilliant display of wattle blossom in the dense understory of Varnish Wattle *(Acacia verniciflua)* and Prickly Moses *(Acacia ulicifolia).* The Southern Blue Gums were also flowering.

### Results and Procedure

Areas that are free from the wattle are becoming more densely grassed. A number of these areas were found to have many mammal diggings indicative of Long nosed Potoroo or Bandicoot origin. Live mammal trapping in these areas produced nothing other than the Bush Rat *(Rattus fuscipes).* No tracks or traces could be found to determine positively what produced the diggings which were conical with a vertical axis, ranging in depth from around 6 cm. to 12 cm. Average diameter at the surface was 6 cm. The bottom of many had a distinct spherical form that might be produced by pressure from an animal snout. Scats found close to these diggings were sent to the Fisheries and Wildlife Service for verification. The conclusion was that these scats were not of Potoroo or Bandicoot origin, but most likely to be that of Rabbit.

A total of ten Bush Rats *(R. fuscipes)* was captured. Eight of these were from areas surveyed on the previous occasion, (King, 1986). Of greater significance was the capture of the other two in the heathland areas, 0.3 km east of the junction between the Old Coach Road and Boyd Road. This, to the writer's present knowledge, is the first indication of the Bush Rat in this area subsequent to the fire.

Extensive placing of traps at the margin between the dense wattle and heathland adjacent to Boyd Road resulted in not a single capture. This was within 100m of capturing Bush Rat on the previous occasion, (ibid.).

Many traces of kangaroo and wallaby were observed in the general area, although no sightings were made.

Only one reptile was found, the skink *Hemiergis maccoyi,* having a distinctive yellow chest and belly. This skink was discovered under a rock at the top of the creek bank. Under the same rock was a flatworm, having a distinctive pink colouration.

Other invertebrates noted were the cockroaches *Blattela germanica* and *Platyzasteria* sp., several species of Ichneumon Wasp and the House Centipede *(Scatigra forceps).*

Some of the more evident flora was: –

Honey Cone Bush – *Isopogon ceratophyllus*
Kidney Weed – *Dichondra repens*
Running Postman – *Kennedia prostrata*
Budled Guinea-flower – *Hibbertia fasciculata*
Scented Sundew – *Drosera whittakeri*
Slender Dodder-laurel – *Cassytha glabella*
Common heath – *Epacris impressa*

Birds observed: –

Sulphur-crested Cockatoo
Eastern Rosella
Pied Currawong
* Spotted Pardalote
White-eared Honeyeater
Yellow-winged Honeyeater
* Welcome Swallow
Little Raven
Eastern Spinebill
Kookaburra
Grey Shrike-thrush
King Parrot
Red Wattlebird
Black Cormorant
Common Bronzewing
Horsfield's Bronze-cuckoo
Pallid Cuckoo
Blue Wren
Blackbird
Flame Robin

* Seen nesting. The Pardalote had a burrow in the bank beside the walking track north of the picnic area.

## Acknowledgements

Acknowledgement is made of the assistance provided by the 2nd Herne Hill Girl Guide Company in transporting, placing and retrieval of the live mammal traps. Their enthusiasm in this regard is most encouraging because they organized their camping to coincide with this survey.

I am grateful to Andrew Bennett, Wildlife Research Officer, for his comments regarding indentity of scats.

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*House Centipede.*
*Drawing: Dave King*

*Ichneumon Wasp.*
*Drawing: Dave King*

# Winter Birdwatching

### Gordon McCarthy

Spring-Summer is the popular time to get out and about bird observing, but Autumn-Winter can also be very rewarding, particularly at local swamps, rivers and shores. To rug up and get out in the "weather" is much more enjoyable than looking out the window and feeling cold.

One interesting walk at this time of year is across the dunes to the mouth of Bream Creek. On a windy day the area looks deserted except for clumps of beach-washed seaweed. On closer inspection with the binoculars, however, nearly every clump shelters a bird – Double-banded Plovers over from New Zealand, Red-capped Plovers in small flocks of adults and juveniles, a few overwintering Red-necked Stints. Further towards Black Rock there could be Hooded Plover, also with juveniles.

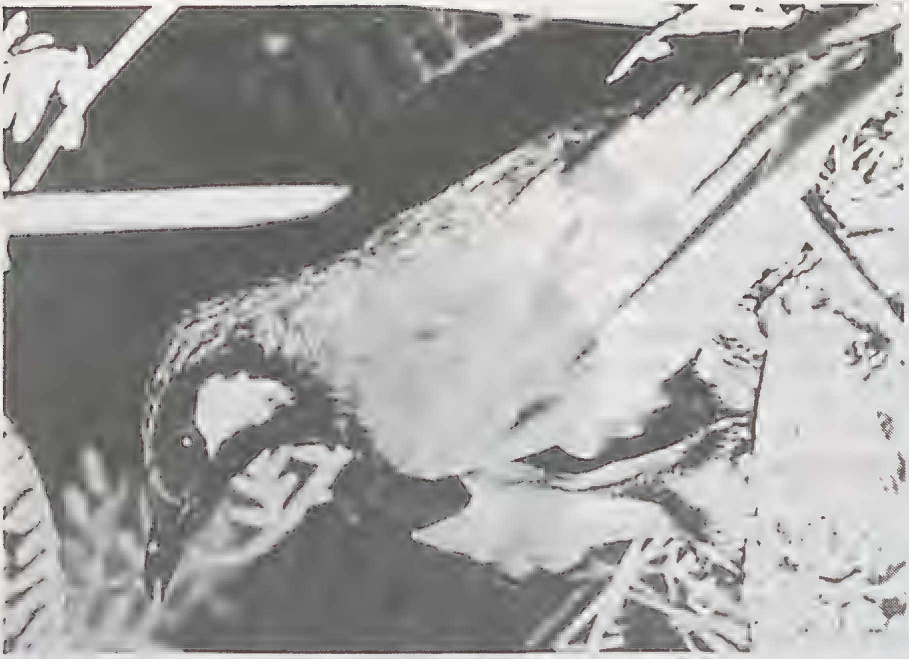
Further down the coast, beyond Point Addis, the pink heath, is flowering prolifically this winter, as are the dwarf ironbarks along the cliffs. Feeding on the nectar is a veritable host of honeyeaters – New Holland, Wattlebirds, Yellow-faced, Brown-headed, White-naped, White-eared, Crescent, Eastern Spinebills, and one of the most attractive of all, the Tawny-crowned, whose musical call is usually the first indication of its presence. Unfortunately, the Tawny-crowned Honeyeaters, along with their habitat, the coastal heathlands, have mostly disappeared from this area. The insect eaters, Bristlebirds, Calamanthus, Thornbills, Wrens are also present.

During winter birds of prey appear to be more plentiful over the Barwon River valley in Geelong than they are in summer. This is particularly true of juvenile Goshawks and Black-shouldered Kites, but Kestrels, Whistling Kites, Brown Falcons and Swamp Harriers also appear from time to time. The beautiful White Goshawk was upstream from Princes Bridge for a week in late May.

Grebes and ducks move into local swamps. Six Pink-eared Ducks arrived at our little swamp on the Belmont Common in June.

So put on your coat and see what you can find. There may be Flame Robins down from the high country, or gems like the Rufous Fantail moving through.

Gordon McCarthy, 26 Fairbrae Avenue, Belmont, 3216.



White-eared Honeyeater. Photograph: Gordon McCarthy

Tawny-crowned Honeyeater. Photograph: Trevor Pescott

*Black-shouldered Kite. Photograph: Trevor Pescott*

# Castlemaine Campout
# June 6, 7 & 8th, 1987

The weather throughout was fine, mild to warm and calm.

Our hosts, Castlemaine F.N.C., had a well organised programme which allowed little time for thorough bird observing in any particular area. One might call it a "twitchers" touring weekend! Nevertheless, it was very enjoyable and we were given an expert overall cover of Castlemaine and nearby country, and the area appeared to be suitable for "bush" campouts in the future.

*Saturday a.m.* was spent in the area roughly west of Castlemaine.

*Saturday p.m.* we toured east and northeast to Mt. Alexander.

*Sunday* was a "pub crawl" through delightful bush and farmland, tasting various mineral springs as far as Daylesford/Hepburn Springs – nobody appeared to exceed. Oh!!

*Monday* to 1300 hours. We visited clay pits and old mining areas in attractive country generally east of Castlemaine.

| | *Saturday* | *Sunday* | *Monday* |
|---|---|---|---|
| Little Pied Cormorant | * | * | |
| Little Grebe | * | | |
| Straw-necked Ibis | * | | |
| Black Swan | * | | |
| Mountain Duck | | * | |
| Black Duck | | * | |
| Mallard (Botanic Gardens) | * | * | * |
| Wood Duck | * | * | |
| Musk Duck | * | | |
| Black Shouldered Kite | | * | |
| Little Eagle | | | * |
| Wedgetailed Eagle | * | * | |
| Black Falcon | | * | |
| Brown Falcon | * | * | |
| Swamp Hen (Botanic Gardens) | * | * | * |
| Coot | * | | |

| | | | |
|---|---|---|---|
| Masked Plover | * | * | |
| Swift Parrot | * | | |
| Sulphur-crested Cockatoo | * | * | * |
| Long-billed Corella | | * | |
| Galah | * | * | * |
| Eastern Rosella | * | | |
| Crimson Rosella | * | * | * |
| Red-rumped Parrot | * | | |
| Fan-tailed Cuckoo | | | * |
| Laughing Kookaburra | * | * | * |
| Welcome Swallow | * | * | |
| Blackbird | * | * | * |
| Spotted Quail-thrush | | * | |
| Superb Blue Wren | * | * | * |
| Striated Thornbill | * | | * |
| Brown Thornbill | | * | |
| Buff-rumped Thornbill | | * | * |
| Yellow-rumped Thornbill | * | | * |
| Whitebrowed Scrub Wren | | * | |
| Scarlet Robin | * | * | * |
| Flame Robin | | * | |
| Rose Robin | | | * |
| Yellow Robin | * | * | |
| Grey Fantail | * | | * |
| Golden Whistler | * | | |
| Grey Shrike-thrush | * | | * |
| Orange-winged Sitella | | | * |
| White-throated Treecreeper | * | * | * |
| Spotted Pardalote | * | * | * |
| Striated Pardalote | | | * |
| Grey-breasted Whiteye | * | * | * |
| Yellow-faced Honeyeater | * | * | |
| White-plumed Honeyeater | * | * | |
| White-eared Honeyeater | * | | * |
| Yellow-tufted Honeyeater | * | * | * |
| White-naped Honeyeater | | * | * |
| Eastern Spinebill | | * | |
| Noisy Miner | * | | |
| Red Wattlebird | * | * | * |
| Red-browed Finch | * | * | |
| House Sparrow | * | * | * |

| | | | |
|---|---|---|---|
| Goldfinch | | * | * |
| Starling | * | * | * |
| Magpie Lark | * | * | |
| White-winged Chough | * | * | * |
| Pied Currawong | * | * | * |
| Grey Currawong | * | | * |
| White-backed Magpie | * | * | * |
| Raven sp. | | * | |

**Noteworthy:**

Saturday – Good views of Swift Parrot and Yellow-tufted Honeyeaters.

Sunday – Spotted Quail-thrush. Long-billed Corellas at Guilford.

Monday – Rose Robin in Botanic Gardens; the number of Pardalotes in Clay pits area; four Fan-tailed Cuckoos together in Dingo Park area.

Geoff Mathison

# Geological Features

The geological land forms of the Castlemaine – Central Goldfields area are the Ordovician rock 450 million years old and composed of deep water marine sediments of clay and mud. These rocks are the slates of the area – closer to home they form the Brisbane Ranges.

Over the ages large scale earth movements deep down in the crust formed horizontal rock formations into a series of tight corrugated folds one above the other. Where they fold over, they are known as anticlines or saddle reefs. Gold is formed in these reefs and other cracks and fault lines intruded by quartz – members were shown several of these anticlinal folds in road cuttings. It is interesting to note that all of eastern Australia is folded in approx. north/south direction as a result of an ancient continental collision. The notable exception is the Musgrave and McDonnell ranges in central Australia which fold east/west.

The dominating land form in the area is granite which digested the bedrock and cooked the adjacent slate, forming hard erosion resistant "hornfelds" which form the ranges around the granite.

In more recent times volcanic eruptions filled the river valleys and changed their courses leaving the alluvial gold trapped beneath basalt caps.

Castlemaine goldfields were rich but relatively shallow compared to Bendigo and little is left of their turbulent past.

Apart from high quality paving slate from the Barkers Creek area other minerals are not important.

Graeme Tribe

## Botany Notes – Castlemaine Campout

The comprehensive Castlemaine Plant List contains names of upwards of 700 native and introduced plants to be found within about 25 km of Castlemaine. In mid June few of these are flowering. Conspicuous was the shrubby Spreading Wattle, whose pale yellow balls of blossom lit up most areas we visited.

Manna Gums provided nectar supplies for birds and insects. Silky Hakeas helped there, too, though local grevilleas were not yet flowering., Even so, one species attracted attention on our Sunday tour of the mineral springs with George Broadway. This was Grevillea objecta, a recently named prostrate plant with holly type leaves. This has been sold in nurseries for a number of years as 'Grev. sp. nova Fryerstown'.

Magenta Stork's-bill appeared in several areas. A few flowers of Golden Everlasting were found, and a single flower of Rock Isotome was also seen. Common and Cranberry Heaths were in flower too.

As well as the two evening slide displays of local scenes and goldfield wildflowers, a most interesting display of freshly-picked fungi was presented by Rita Mills. These included Fly Agaric, as well as the edible, and, we were told, very tasty Saffron Milk Cap. Both species arrear to have symbiotic relationships with pine roots.

Ted Errey.

# More Precious Than Gold

The goldfields around Castlemaine could not have yielded anything more precious than the flora now growing where once miners dug for gold.

Those of the G.F.N.C. who were guests of the Castlemaine Field Naturalists Club Inc. on the Queen's Birthday weekend, were treated to interesting sights of this native flora, much of it not seen in the Geelong area.

For this writer particularly, the tantalizing glimpses of orchids in bud gave promise of future delights in store.

Whilst Prasophyllum despectans had just finished flowering, tiny Pterostylis parviflora was still showing a brave face with P. longifolia almost ready to burst into flower.

Pterostylis nutans and P. nana as well as Cyrtostylis reniformis were in bud and will soon be ready to follow. Leaves of other greenhoods giving promise of later flowering were P. curta, P. mutica and possibly P. pedunculata.

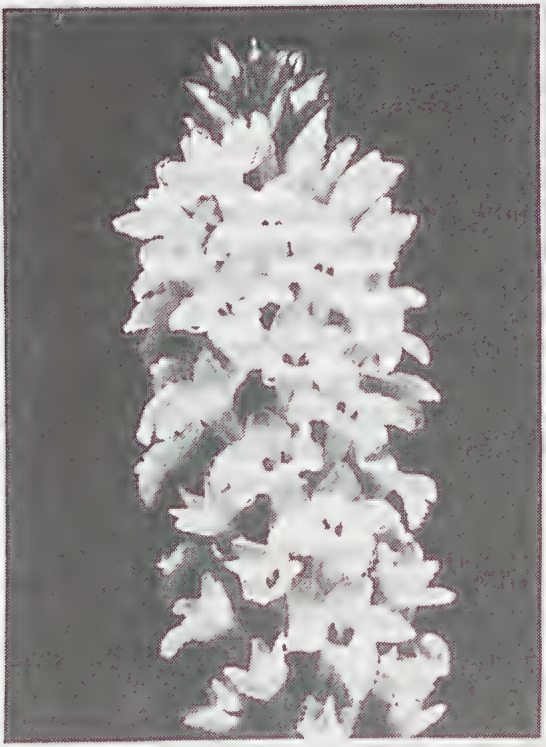
Judging by the hundreds of leaves pushing through the hard ground, it will not be long before it is a carpet of purple Glossodia majors interspersed with the pinks, yellows and blues of Thelymitras with here and there the bronze of the Calochilus.

With the visits to the Anticlines and the Claypits, the Chimneys and the Spas as well as all the birds seen along the way this was a weekend full of interest and we thank the C.F.N.C. for their time and their hospitality, and for showing us things more precious than gold.

## Orchids Seen in the Castlemaine Area. Queen's Birthday Weekend 1987.

| | |
|---|---|
| *Prasophyllum despectans* | Sharp Midge |
| *Pterostylis curta* | Blunt Greenwood |
| *Pterostylis longifolia* | Tall Greenhood |
| *Pterostylis nana* | Dwarf Greenhood |
| *Pterostylis nutans* | Nodding Greenhood |
| *Pterostylis mutica* | Midget Greenhood |
| *Pterostylis pedunculata* | Maroonhood |
| *Pterostylis parviflora* | Tiny Greenhood |
| *Glossodia major* | Waxlips |
| *Thelymitras* | Sun Orchids |
| *Calochilus* | Beard Orchids |
| *Crytostylis reniformis* | Mosquito Orchid |

Merle Trigg



*Woolly-style Heath. Photograph: Valda Dedman*

# Some Victorian Heaths

**Betty Quirk**

My introduction to heath was as a child of about eight years old, when I was taken for my first car ride. We went to Cheltenham, and the paddock of heath was taller than I was. I remember picking an armful.

It was not until I joined the Geelong Field Naturalists Club that I realised how many varieties of heath there are, and it was going out on excursions to places such as the Grampians, Mount Arapiles and Mount Baw Baw that whetted my enthusiasm to know more about them.

The Grampians especially have a great diversity of heaths, and the following are some that I particularly like:

Grampians Heath *Epacris impressa, var. grandiflora*

This differs from the common heath that grows around Geelong; it has greyish-downy coarser and broader leaves and the flowers are wider.

Woolly Style Heath *Epacris lanuginosa*

A slender bush of swampy tracts; the white flowers are in terminal leafy spikes.

Golden Heath *Styphelia adscendens*

A very showy flower with yellow tubular flowers which are concentrated at the end of the branches and measure 2 cm without the long protruding stamens.

Peach Heath *Lissanthe strigosa*

It favours hard gravelly ground and is widespread throughout Victoria. The narrow prickly leaves are 10-15 mm long, and the urn-shaped flowers are pale pink and white.

Pink Swamp Heath *Sprengelia incarnata*

As its name implies, it is found in swampy ground, and it makes a lovely sight to see a large area in flower.

Pine Heath *Astroloma pinifolium*

A low bush with fine leaves; the long tubular yellow flowers are tipped with green and dispersed through the foliage.

*Pine Heath.*
*Photograph: Betty Quirk*

*Brush Heath.*
*Photograph: Betty Quirk*

Flame Heath *Astroloma conostephioides*

It is one of the most spectacular heath flowers in Victoria. The corolla is 15-25 mm long and narrows to a point. It is vividly scarlet as are the satiny sepals and bracts. This heath is commonly known as the Emu Bush, as Emus devour both flowers and fruits. It extends to the Big Desert.

Brush Heath *Brachyloma ericoides*

A dense straggling bush, whose narrow crowded leaves are needle-tipped. The flowers are salmon-pink and urn-shaped.

Heaths that are more common in the Geelong area are as follows:

Common Heath *Epacris impressa*

It has been beautiful around Anglesea this year. Along Forest Road it was a garden, with all colours vying with one another.

Cranberry Heath *Astroloma humifusum*

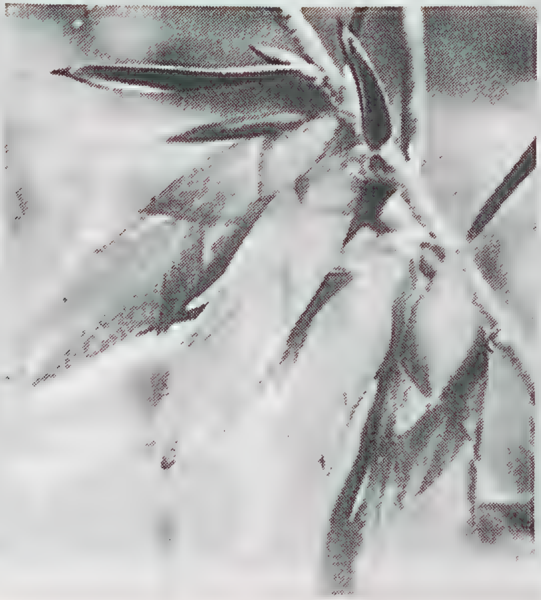
A prickly prostrate semibush, which has tubular bright-red flowers almost hidden amongst the foliage. The berries are edible.

Daphne Heath *Brachyloma daphnoides*

Often a dominant goldfields shrub, it has blunt smooth grey-green leaves and white honey-scented axillary flowers.

Prickly Broom-heath *Monotoca scoparia*

The Broom-heaths have the least attractive flowers. These ones are very small, only 2 mm long and are creamy-white.



*Flame Heath.*

*Photograph: Frances Poole*

I will finish with a few of the alpine heaths:

Candle Heath *Richea continentis*

Widespread in spaghnum bogs where it forms a rigid shrub up to one metre high. It has recurved lanceolate leaves 3-10 cm long, sheathing at their bases, which are the longest among the Victorian heaths. Its creamy flowers are massed in erect cylindrical spike-like panicles.

Carpet Heath *Pentachondra pumila*

This little heath forms dense mats with crowded leaves and white sessile flowers. Its berries are red and 6-8 mm broad.

Swamp or Alpine Heath *Epacris paludosa*

Restricted in Victoria to alpine heathlands and higher mountain forests, it is plentiful around springs and stream banks. The white flowers are in small clusters at the end of the branchlets.

Betty Quirk, 2 Crimea Street, Drysdale, 3222.

*Peach Heath. Photograph: Betty Quirk*

# GFNC Excursion to Teesdale/Inverleigh 17 May, 1987

**Valda Dedman**

The excursion gave us the opportunity to inspect various remnants of original vegetation. These are important as representatives of the former natural landscape which has been largely cleared for agriculture and more recently changed by denser settlement.

The Inverleigh Common Flora Reserve and the Teesdale Sheoak Reserve have been set aside because of their botanical significance; vegetation at the Teesdale Cemetery remains almost by default – slashing and clearing put it at risk, while wise management of the natural environment on the Hughes and Woolbrook properties should keep it intact for some time.

A week of almost incessant rain (85 mm) had left paddocks covered with water and dams overflowing. Noteworthy sightings on the way to Teesdale were a flock of some 200 Sacred and Straw-necked Ibis near the Fyansford turnoff, and large numbers of Cattle Egrets and Silver Gulls in a flooded paddock beside the Ballarat Road not far from Geelong.

We first visited the small property at Teesdale belonging to new members, Dianne and Bill Hughes. This includes a recently built dam with island, a sandy area covered with Kangaroo Grass and a small Red Gum swamp. Unfortunately the Blue-billed Ducks which had nested at the dam last season were not present, and we had to be content with an adult and brightly-coloured juvenile Australasian Grebe and a Grey Teal, and an Australian Shelduck in an adjoining paddock. Three White-faced Herons flew off at our approach. Excellent views were had of a pair of Golden Whistlers and Striated Pardalotes.

At the Teesdale Cemetery some interesting plants survived, the most notable being vigorous specimens of Magenta Storks-bill, flowering profusely on tall stems 30 cm high. Others of interest were Cranberry Heath, Tall Bluebell, Common Everlasting and Rice-flower, and regenerating Sheoaks. A planted Pincushion Hakea attracted three species of bee and New Holland Honeyeaters.

The Teesdale Sheoak Reserve was purchased in 1975 by the Victorian Conservation Trust to preserve a unique stand of Casuarina stricta, a tiny four acre patch now surround by pasture. It is managed by the Department of Conservation Forests and Lands, which has largely eradicated furze and boneseed, but has unfortunately also cleared many dead and fallen branches which could provide cover for small mammals. (We pulled the remaining dozen boneseed plants).

Although there is not a great diversity of vegetation in the Reserve, we noted a pleasing regeneration of Sheoaks and Manna Gums. There are also some very old and very large specimens of Sweet Bursaria and Acacia armata. Black Wattle and Golden Wattle are also present. Ground plants are mostly grasses, with some Rock Fern and Cranberry Heath whose flowers were visited by White-plumed Honeyeaters.

Superb Fairy-wrens appeared to be the commonest birds; they had plenty of shrubby cover, but were generally seen near the top of the trees. The most interesting sighting was a Diamond Firetail, whose bright colours were admired by all. About a dozen earthstars were found, and attracted a great deal of interest. These fungi start life as puffballs, whose outer layer splits as it matures and opens out in to a surrounding star.

Lunch was taken beside the road, at a spot overlooked by three Blue Gums which had been planted many years ago. Out in the paddock an old gnarled Manna Gum survived. Birdwatching continued, and a Restless Flycatcher, Galahs, Brown Falcon and Eastern Rosellas were added to the bird list.

On the way to Inverleigh Common we stopped to look at a fine example of wetland retained on the Woolbrook property. An attractive reed-fringed swamp has been developed along the creek and nest boxes supplied. Eight bird species were seen in a few minutes, including Little Pied Cormorant, Dusky Moorhen, Purple Swamphen and Black Duck. This was rural conservation at its best, and the owners are to be congratulated on their sensitive treatment of the environment.

The Inverleigh Flora Reserve of 1080 ha. is a remnant of grassy woodland, mainly of Manna Gum and Yellow Gum with Red Gum in lowlying areas. There are quite large areas of bracken and adjoining stands of Silver Banksia with Black Wattle. New Holland Honeyeaters were common among the flowering Banksias. Only 15 bird species were recorded at the Common, but they included Eastern and Crimson Rosellas, Spotted and Striated Pardalotes and a pare of Wedgetailed Eagles which soared spectacularly. Wedgetailed Eagles used to next in an old tree overlooking a bracken area, but we did not find the nest on this occasion.

It was not a good time of year for orchids. The leaves of three species were located among the bracken, but no flowers found. Leaves of a sun orchid were found in a grassy area. More than 30 orchid species have been recorded for the Inverleigh Common and 13 lilies; a total of over 170 plants have been listed. Members saw many of the leaf rosettes of Bears Ears, which have toothed edges and furry undersides.

Animals seen included a road-killed Grey Kangaroo, a Swamp Wallaby in the bracken, a large male Koala, awake and alert, and a few rabbits. Several spiders claimed our attention; a Red-back and a leaf-folding Crab Spider with pale green head, grey body and brown legs. These spiders fold over a growing leaf to form a retreat. Spider "nests" were also found. They were constructed of leaves drawn together with silk and may have belonged to another crab spider species.

Ants were busy after the rain, working out from their nest mounds covered with fine gravel. Other ants were attending leaf hoppers, brilliantly coloured red, white and blue, which were clustered along a eucalypt stem. Ants are often associated with sap-sucking insects, which produce large amounts of honeydew which is a prized food item of the ants. Ants sometimes even take sap-sucking insects into their nests during the cold season and return them to the host plant when favourable weather arrives.

All in all it was a good excursion. No spectacular new species were recorded, the bird list was not particularly long (39 species) and the orchids were not in bloom, but there was a high level of interest throughout the day.

Valda Dedman
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# Bird List

| | | H | TC | SR | Ww | IC |
|---|---|---|---|---|---|---|
| Australasian Grebe | *Tachybaptus novae hollandiae* | | | | | |
| Little Pied Cormorant | *Phalacrocorax sulcirostris* | * | | | * | |
| White-faced Heron | *Ardea novaehollandiae* | * | | | | |
| Cattle Egret | *Ardeola ibis* | FP | | | | |
| Sacred Ibis | *Threskiornis aethiopica* | FP | | | | |
| Straw-necked Ibis | *Threskiornis spinicollis* | FP | | | | |
| Australasian Shelduck | *Tadorna tadornoides* | * | | | | |
| Pacific Black Duck | *Anas superciliosa* | | | | * | |
| Grey Teal | *Anas gibberifrons* | * | | | | |
| Whistling Kite | *Haliastur sphenurus* | | | * | | |
| Wedge-tailed Eagle | *Aquila audax* | | | * | | * |
| Brown Falcon | *Falco berigora* | | | * | | |
| Dusky Moorhen | *Gallinula tenebrosa* | | | | * | |
| Purple Swamphen | *Porphyrio porphyrio* | | | | * | |
| Eurasian Coot | *Fulica atra* | | | | * | |
| Silver Gull | *Larus novaehollandiae* | FP | | | | |
| Galah | *Cacatua roseicapilla* | | | * | | |
| Long-billed Corella | *Cacatua tenuirostris* | | * | | | |
| Crimson Rosella | *Platycercus elegans* | | | | | * |
| Eastern Rosella | *Platycercus eximius* | | | * | | * |
| Red-rumped Parrot | *Psephotus haematonotus* | * | | | | |
| Skylark | *Alauda arvensis* | | * | | | |
| Welcome Swallow | *Hirundo neoxena* | * | | | | * |
| Black-faced Cuckoo-shrike | *Coracina novaehollandiae* | | | | | * |
| Flame Robin | *Petroica phoebica* | * | | | | |
| Golden Whistler | *Pachycephala pectoralis* | * | | | | * |
| Grey Shrike-thrush | *Colluricincla harmonica* | | | * | | * |
| Restless Flycatcher | *Myiagra cyanoleuca* | | | * | | |
| Grey Fantail | *Rhipidura fuliginosa* | * | | | | |
| Willie Wagtail | *Rhipidura leucophrys* | | | * | | * |
| Superb Fairy-wren | *Malurus cyaneus* | * | | * | | * |
| Red Wattlebird | *Anthochaera carunculata* | | * | * | | * |
| White-plumed Honeyeater | *Lichenostomus penicillatus* | | | * | | * |
| New Holland Honeyeater | *Phylidonyris novaehollandiae* | | * | | | * |
| Spotted Pardalote | *Pardalotus punctatus* | | | | | * |
| Striated Pardalote | *Pardalotus striatus* | * | | | | * |
| Diamond Firetail | *Emblema guttata* | | | * | | |
| Australian Magpie-lark | *Grallina cyanoleuca* | * | | | | |
| Australian Magpie | *Gymnorhina tibicen* | * | | | | * |

FP = Flooded paddocks
H = Hughes property
TC = Teesdale Cemetery
SR = Sheoak Reserve (includes lunch stop)
WW = Woolbrook wetlands
IC = Inverleigh Common

# Plants of Interest

| | | H | TC | SR | IC |
|---|---|---|---|---|---|
| Rock Fern | *Cheilanthes tenuifolia* | | | | * |
| Austral Bracken | *Pteridium esculentum* | | | | * |
| Autumn Bird-orchid | *Chiloglottis reflexa* | | | | * |
| Slaty Helmet-orchid | *Corybas diemenicus* | | | | * |
| Trim Greenhood | *Pterostylis concinna* | | | | * |
| Sun-orchid sp. | *Thelymitra sp.* | | | | * |
| Kangaroo Grass | *Themeda australis* | * | | | * |
| Austral Bear's-ears | *Cymbonotus preissianus* | | | | * |
| Common Everlasting | *Helichrysum apiculatum* | | * | | |
| Tall Bluebell | *Wahlenbergia stricta* | | * | | |
| Drooping Sheoak | *Casuarina stricta* | | * | * | |
| Scented Sundew | *Drosera whittakeri* | | * | | |
| Cranberry Heath | *Astroloma humifusum* | * | * | | |
| Running Postman | *Kennedia prostrata* | | | | * |
| Magenta Stork's-bill | *Pelargoniom rodneyanun* | | * | | |
| Hedge Wattle | *Acacia armata* | | | * | * |
| Black Wattle | *Acacia mearnsii* | | | | * |
| Golden Wattle | *Acacia pycnantha* | | | * | |
| River Red Gum | *Eucalyptus camaldulensis* | * | | | |
| Manna Gum | *Eucalyptus viminalis* | * | | * | * |
| Sweet Bursaria | *Bursaria spinosa* | | | * | |
| Silver Banksia | *Banksia marginata* | | | * | |
| Small-leaf Clematis | *Clematis microphylla* | | | | * |
| Guinea flower sp. | *Hibbertia sp.* | | | | * |
| Common Rice-flower | *Pimelia humilis* | | * | | |
| Boneseed | *Chrysanthemoides monolifera* | | * | | |

H = Hughes property
TC = Teesdale Cemetery
SR = Sheoak Reserve
IC = Inverleigh Common

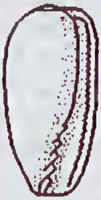
*Magenta Stork's-Bill*
*Photograph: Val Dedman*

# A Further Note on the Margin Shells (Marginellidae) of Central Victorian Shores

**Dean Hewish**

Subsequent to the submission of the article – Hewish, D. (1987). The Margin Shells (Marginellidae) of Central Victorian Shores – *Geelong Naturalist* 23: 89-100, I discovered that an additional species was relatively common, on beaches, particularly in western Victoria. As this shell can be confused with other, unrelated shells, I have added this diagram and description:

*Marginella vincentiana* Cotton 1944



This shell has four columella plaits plus, in some specimens, a fifth plait which is extremely weak. The spire is very short and may be covered with enamel, making it appear to be buried. The outer lip is finely denticulated. This species is quite common in South Australia and the shell can be collected from Victorian beaches, particularly in the west of the state 5mm.

## Acknowledgements

I would like to thank the staff of the South Australian Museum, the staff of the Australian Museum, and the staff of the Tasmanian Museum for their hospitality and help during research for this article. The help of Marilyn Hewish in correcting the manuscript and illustrations is also gratefully acknowledged.

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## Editorial

The articles in this issue reflect the diversity of interests which our Club pursues – birds, plants, outings, surveys, conservation work – as well as the interdependence of the various facets, and the ongoing character of our natural history records. Thus Dave King's observations on currawongs at Ocean Grove adds to the story of the GFNC involvement with boneseed eradication at the You Yangs, and Gordon McCarthy's note about birds using charcoal is a follow-up to Trevor Pescott's earlier observations. In a later issue perhaps someone will bring to light futher evidence to support Lawrie Conole's theory of a relic population of Hylacolas on the Bellarine Peninsula. Reports of early sightings would be most helpful; there are few published bird records for the Geelong area between Belcher in 1914, and 1964 when the present Club journal began. The comments and comprehensive bird list of Canadian visitor, Rudolph Koes, will provide a point of reference for the future. Although Roy Whiteside could not include the Rose Robin in his list for the Bird Study Group's most successful "Geelong Garden Birdwatch" held during Bird Week in October, other unusual sightings may turn up as the information on more than two hundred forms is collated.

Finally, Ray Baverstock provides a new insight on the Buckleys Falls area. This times in well with the publication of the Club's book about the Barwon River in Geelong, "From Buckleys to the Break", which will be launched in the near future. To make sure you receive your copy, please place your order with the Club Secretary as soon as possible.

Valda Dedman

- 9 DEC 1987

# The Chestnut-Rumped Hylacola *Sericornis pyrrhopygius* on the Bellarine Peninsula

**L.E. Conole**

A notoriously difficult bird to observe, the Chestnut-rumped Hylacola *Sericornis pyrrhopygius* is one of four Acanthizid warblers of the genus *Sericornis* found in the Geelong area (White-browed Scrubwren *S. frontalis*, Calamanthus *S. fuliginosus*, Speckled Warbler *S. saggitatus)*. Typically it inhabits heathland, heathy open-forest and woodland, and coastal closed-scrub in south-eastern Australia. In the Geelong area, Pescott (1983) regards it as regionally uncommon, occurring in the laterite (ironstone buckshot) country of Anglesea-Airey's Inlet in the eastern Otway ranges, and in the Brisbane Ranges. The eastern Otways appear to be the local stronghold of the species, but it is of unknown status in the Brisbane Ranges. Pescott (1983) cites an observation, which he describes as extraordinary, of one or two Chestnut-rumped Hylacolas on Mud Island, Port Phillip Bay in November 1953 by Harold Tarr and Jack Launder. Further to this, Pescott (1983) suggests that as Mud Island is so distant from the nearest place where they are known (eastern Otways) the Hylacolas may have been forced there ahead of south-west gales. Belcher (1914) only records the species in the eastern Otways, and it was only discovered there in 1910.

In this paper, I report the presence of two previously unrecorded populations, probably relics, around Swan Bay on the Bellarine Peninsula. Chestnut-rumped Hylacolas were not ever recorded as occurring on the Bellarine Peninsula (Pescott 1983). The existence of these populations sheds new light on the presence of Hylacolas on Mud Island in 1953, then regarded as vagrants.

I first observed Chestnut-rumped Hylacolas at Edward Point State Faunal Reserve, north Swan Bay, in 1979. Subsequent observations by me have been scarce, suggesting the species is rare there. Gordon McCarthy (pers. comm.) has also observed Hylacolas at Edward Point. The habitats in which Hylacolas occur at Edward Point are:

(i) coastal closed-scrub of Coast Beard-heath *Leucopogon parviflorus,* Wirilda *Acacia retinodes,* Grey Saltbush *Atriplex cinerea* with dense *Poa/Scirpus* tussock grassland.

(ii) saltmarsh shrubland of Shrubby Glasswort *Halosarcia pergranulata.*

John Pratt (pers. comm.) showed me a second location where Hylacolas occur, at Burnt Point in southern Swan Bay. The habitat there, although much less extensive, is as for Edward Point. The Hylacola may be in danger of extinction at Burnt Point due to habitat disturbance and destruction.

It appears that the Chestnut-rumped Hylacola has been present on the Bellarine Peninsula, undetected until relatively recently. The difficulty in observing the species coupled with its scarcity may have ensured its anonymity as a Bellarine Peninsula resident. Probably Hylacolas were once more widespread on the Peninsula, and perhaps Mud Island, and have declined unnoticed. It would appear also that the Hylacolas observed on Mud Island in 1953 were either rare island residents, or were visitors from nearby mainland populations. Almost certainly the Chestnut-rumped Hylacolas at Edward Point and Burnt Point represent relic populations of a once wider distribution.

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# Mangroves – a precious environment

### Ted Errey

Until recently the mention of mangroves conjured up in my mind thoughts of mud and mossies. Mangroves, I would have said, were related species of mainly tropical trees, with a few local occurrences forming the southern limits of their range. It came as a surprise to learn that mangroves include a number of unrelated plants, one of them a palm, another a fern.

The name 'mangrove' derives from 'mangle groves', which were areas where Rhizophora mangle grew along tropical coasts of Africa and America. In common usage 'mangroves' refers as much to the habitat as to the trees themselves.

The family Rhizophoraceae consists mainly of Malayan rain forest trees. It includes, in Australia, 11 species of mangroves, of three different genera. The remainder of our 29 mangrove species belong to 14 unrelated families.

The diversity of this mangrove vegetation is obvious when we consider some of the trees comprising it. Milky Mangrove is in Euphorbiaceae family, along with Wedding Bush, Bleeding Heart and Petty Spurge, a common weed in our gardens. Yamstick Mangrove belongs to Rubiaceae which includes Coprosmas and Gardenias. Cedar and Cannonball Mangroves, the only deciduous species, are allied to White and Red Cedars of the rain forest. Myrtle Mangrove is in Myrtaceae, with our Eucalypts, Tea-trees and Thryptomenes. Others are members of the same families as Cassias and Kurrajongs.

So mangroves, instead of being inter-related plants, are in the main, from unrelated families, certain members of which have adapted themselves to cope with the saline and often semi-fluid conditions of the coastal flats. And that, I suppose, should have been expected. Desert plants and alpine plants are medleys, so why should mangroves be otherwise.

The only species in this state, Grey (or White) Mangrove, is included in Verbenaceae (with Verbena, Lantana and Teak), though some taxonomists have placed it in a family of its own, Avicenniaceae.

It appears to be a pioneer among mangroves, being found in suitable habitats all around our mainland shores. In northern parts it occupies the inner and outer fringes of the mangrove zone. Along the NSW coastline, two or three species are to be found, the number increasing to half a dozen north of the Tropic of Capricorn. At the latitude of Cairns the number has grown to 26.

Mangrove areas are essentially sheltered shores. Tidal flats and estuaries, and the landward side of off-shore islands provide ideal conditions for these salt-tolerant plants. Their method of coping with the salt varies with the kind. Some restrict the salt taken in with water by the roots. The salt that does enter the system is stored in the older leaves, and disposed of when the leaves fall. Others have special glands on the leaf surface or stalk to secrete the salt. The secretion is saltier than the sea-water itself.

Root systems vary, though all are shallow, lacking tap roots, but with wide-ranging lateral roots. Most include pneumatophores to obtain oxygen at low tide. These are either vertical projections from the lateral roots, extensions of prop roots, or protruding knee roots. Much of the pneumatophore comprises spongy gas-filled tissue that absorbs oxygen when the tide falls. Prop roots, either looping from the trunk or growing down from the lower branches, add support to species living in zones furthest from solid ground. Mangroves related to Kurrajongs and to Cedars have developed wide, flat buttress roots that provide support in the mud and also help with oxygen supplies. In the words of Lear and Turner, the various forms of pneumatophores are all “special short-cut air supply organs for underground roots”.

The pneumatophores of Grey Mangroves are the simple vertical projections from roots running horizontally. In this district, apart from a small remnant near the mouth of Hovell’s Creek, Corio, the only mangroves appear to be at Barwon Heads and Swan Bay. The Barwon Heads colony, along the south bank of the river near the Sheepwash, is a considerable area sparsely covered with these trees, from seedlings to mature specimens.

*Photographs: Ted Errey*
*Nypa Palms, (Mangroves), Claudie R. estuary, 3 km from sea.*

*Prop roots on Mangroves, North Queensland*

During a visit to the area in mid-October, no small birds were seen in the vegetation, though when flowers appear later they will doubtless be plentiful. Water-birds were conspicuous, on, over and beside the river. White and Straw-necked Ibis, Pelicans, Little Pied Cormorants, Egrets and Spoonbills were there.

As the meeting place of land and sea, and a realm influenced by the cycle of the tides, mangroves provide a habitat that attracts a tremendous variety of life forms. The abundance of these brings an abundance of predators, so it is natural to expect many birds in such a locality. Last July the lagoons near the Cairns airport presented a varied assortments, ranging from Sunbirds and Rainbow Bee-eaters to Jabirus, Magpie Geese and Black Kites.

The road in to the airport skirts the mangroves. In fact the aerodrome seems to be on land reclaimed from these trees. Fortunately, board-walks are being constructed into the mangrove area to allow for a closer inspection of the plant and animal life that abounds there. Apart from varied crabs, mud whelks and mudskippers, sponges and corals, many young fish inhabit these waters. The importance of mangrove areas as fish nurseries is considerable. For example, sea mullet, which make up about half of Queensland's commercial catch, use the mangrove estuaries both as juveniles and as adults.

In our district, such territory is too limited to have much value, but around Western Port and Corner Inlet the influence would be greater. Certainly in warmer latitudes the mangrove regions play a most important role in nurturing the life of the sea.

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# Picnics at Buckleys Falls

**Ray Baverstock**

In the past few years my wife and I have rediscovered the delights of Buckleys Falls.

One beautiful December afternoon we decided to take advantage of daylight saving time and have tea there, so armed with the necessary provisions (and birdwatching gear) we set off in the car and in little more than five minutes were there. It was many years since we had been to Buckleys Falls, and we soon realised that so often people overlook the beauty that is almost on their own doorstep.

As we sat in the picnic area and looked upstream at the old paper mill on the other side, memories flooded back of childhood. Lena recalled how her Brownie pack would catch the tram to Lilburne's shop at the corner of Aphrasia Street and Shannon Avenue, and then hike to Buckleys Falls for picnics. I could remember the many times when my father and I would ride our bikes from Herne Hill, down the Deviation Road, past the "Giant's Armchair" on the corner near the Moorabool River junction and then through Fyansford, to fish the Barwon river above the diversion weir opposite Baum's homestead.

Although it is now more than forty years ago, I can vividly recall one occasion when we were walking back to our bikes and I casually threw my still baited line into the sluice box leading to the mill race. To my surprise the floater disappeared and I was able to land a large redfin (English Perch).

Incidentally, in recent years I have found what I consider to be the perfect recreational combination – angling and birdwatching.

If the fish are not biting you can always go birdwatching, and if the fish *are* biting, who wants to birdwatch anyway?

On the December day I first mentioned we were able to observe a number of birds. Superb Fairy-wrens were hopping around the picnic area, Reed Warblers were calling, White-plumed Honeyeaters were flying back and forth across the river and a Large Black Cormorant flew upstream towards the falls and returned some time later. Dusky

Woodswallows were gliding about from a dead tree alongside our picnic table, sometimes landing on the log fence surrounding the car park. The only discordant note was a persistent monotonous whistling not unlike a boy whistling for his dog. After about half an hour I investigated and found that the source of the sound was a Crested Shrike-tit sitting in a small tree at the edge of the car park.

Late in the afternoon I decided to walk downstream and have a look at the nesting tree in Queens Park used by the Rufous Night Herons. I found the tree but there was no sign of any herons there. On the way back I did one Rufous Night Heron in a small eucalypt, silhouetted against the setting sun. When I returned to the picnic area Lena took great delight in informing me that just after I had left a Night Heron had landed in a nearby tree.

Subsequent picnics have proved even more interesting. On our second visit some Red-browed Firetails were feeding in the picnic ground. (This is the closest to Geelong that I have seen this species), and further upstream I was able to watch a White-faced Heron fishing for minnows or Galaxias. The bird was standing on the rocks beside a small waterfall at the end of the main falls. Every now and then it would plunge its beak into the water and emerge with a fish which was quickly swallowed. I also discovered what appeared to be a small midden consisting of freshwater mussels. Some large minnows or Galaxias were sighted in one of the pools amongst the rocks.

Some years ago one of my workmates who is a keen angler told me that Australian Grayling make their way up to the falls, usually around October. He also mentioned that it is almost impossible to catch them with bait, but that they will occasionally take a small artificial fly.

At other times a Magpie with a metal band on its left leg has been seen in the picnic area, and on our last visit we were pleased to have some laughing Kookaburras. In recent years these birds have disappeared from our part of Highton. Also present was a Grey Shrike-thrush and two pairs of Black-faced Cuckoo-shrikes which appeared to be looking for suitable nesting sites.

A Water Rat was seen swimming close to the reeds on the south bank late in the afternoon and on the far bank rabbits were running about or basking in the sunshine.

*Barwon Paper Mill at Buckleys Falls. Photograph: Trevor Pescott*

Occasionally small skinks can be seen beside the paths, and although it appears to be ideal habitat I have yet to see a snake in the area.

Of course there is more that one can do in the area than simply have a picnic or go birdwatching. A walk along the lower track gives a view of the water cascading over the side of the recently reconstructed mill race, or further on one can scramble over the rocks to reach the big pool at the foot of the main falls.

A walk along the upper track brings you to the lookout at the top of the cliff. You can then continue on and descend to the big pool, and when the river is low cross over to the north bank. You can often see Rufous Night Herons near the top of the weir ready to pounce on any fish passing by.

The river is not always in a peaceful mood and in times of flood it can become a raging torrent and is then an awesome sight. I can still remember the record flood in the 1950's when the sight and sound of the water crashing over the falls was frightening. Even the lower part of the Deviation Road at Fyansford was flooded an impassable.

So far on our visits which range from December 1983 to September 1987 I have observed 45 species of birds in the vicinity of the falls or flying over the area. The list is as follows:

Australian Pelican, Great Cormorant, White-faced Heron, Great Egret, Rufous Night Heron, Sacred Ibis, Straw-necked Ibis, Pacific Black Duck, Dusky Moorhen, Purple Swamphen, Eurasian Coot, Silver Gull, Domestic Pigeon, Spotted Turtledove, Galah, Sulphur-crested Cockatoo, Little Lorikeet, Crimson Rosella, Fan-tailed Cuckoo, Horsfield's Bronze-cuckoo, Shining Bronze-cuckoo, Laughing Kookaburra, Welcome Swallow, Black-faced Cuckoo-shrike, Blackbird, Crested Shrike-tit, Grey Shrike-thrush, Willie Wagtail, Clamorous Reed-Warbler, Little Grassbird, Superb Fairy-wren, Red Wattlebird, White-plumed Honeyeater, White-naped Honeyeater, Spotted Pardalote, Silvereye, European Goldfinch, European Greenfinch, House Sparrow, Red-browed Firetail, Common Starling, Australian Magpie lark, Dusky Woodswallow, Australian Magpie, Little Raven.

If you have an afternoon or even an hour or two to spare, I suggest that you visit this beautiful area. I am sure that you will be able to add greatly to the above list.

I am also sure that keen botanists will find much of interest at Buckleys Falls. The area is also good for angling and the calm stretches suitable for canoeing.

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# A Rose Robin *Petroica rosea* visits a Highton Garden.

### Roy S. Whiteside

At 8.30 a.m. on Sat. September 5th 1987 my wife, Helen and I observed from the kitchen window for a few seconds a red-breasted robin in the vicinity of the garden pond. We initially dismissed it as being a Scarlet Robin. The appearance in itself of a red breasted robin was quite an occasion as we had not observed that type of bird in our garden since first moving here some 17 years ago when we saw a Scarlet Robin a few times during the first year. At that time we were somewhat closer to the edge of suburbia than we are now. The Scarlet Robin is still to be seen not far away from our house, for example in the grounds of Deakin University or near Buckleys Falls.

Some two hours later on the same day, I was in the garden and observed the red breasted bird again and then realised it was a male Rose Robin rather than a Scarlet Robin. The features which distinguished it from a Scarlet Robin were the smaller size, no white on the wing, white on the outer tail feathers and a dark grey back rather than a black one.

I thought I would like to record this "historic" event on film so I raced indoors for a camera, quickly attached a telephoto lens and approached the bird with extreme caution, thinking that a bird that typically resides deep in the Otway Ranges would be extremely timid. This did not prove to be the case. At one stage the bird perched briefly only about 1 metre away which was unfortunately out of focussing distance for the telephoto lens. The antics were reminiscent of a Grey Fantail or Yellow Robin which often, when first encountered in the bush, have an instinct of curiousity which results in these birds coming quite close to a human "intruder". I was successful in taking some photographs on 35mm slide film and also some video pictures.

The Rose Robin spent most of the time feeding on small insects at various heights between ground level and about 10 metres mainly in a Cootamundra wattle tree overhanging the pond and at other times it liked feeding in a black wattle. The bird had a characteristic similar to the Grey Fantail when flying because of the fanning out and flicking from side to side of its tail feathers. I did not observe it to bathe at the shallow edges of the pond as many species of bird often do, but at one stage the bird did swoop down to catch an insect from azolla floating on the surface of the water. During the considerable period I observed the bird I did not hear any significant song, only a rather feeble twitter. The bird appeared to be without a mate.

The bird remained in the vicinity of the garden pond for some 7 hours altogether but did not reappear on the following day nor on any subsequent days (the time available for observing being limited to early morning and late afternoon).

It was returning, perhaps, from wintering at somewhere to the north-east (e.g. You Yangs) and on its way back to the Otway Ranges.

There have been recent sightings of the Rose Robin by members of this club at Castlemaine botanical gardens at a campout in June this year, at Sedgwick (2/8/87 reported in the Sept. issue of "Whirrakee" (the monthly publication of the Bendigo Field Naturalists Club).

The number of recorded sightings of the Rose Robin in the suburban area of Geelong have been few but among those that have been recorded are as follows: –

Valda Dedman – Birds of a Geelong Garden – "Geelong Naturalist". Oct. 1968. Vol. 5 No. 3.

This article reported a male bird visiting her Highton garden for several weeks.

Trevor Pescott – "Birds of Geelong" – gives a records of a dead immature bird in West Geelong, March 1975 and a male and female in Belmont, April 1977.

Pat Russell – Area Bird Report – "The Geelong Naturalist" Vol. 24 No. 1 May 1987. This reports that a rose robin was seen by Grant Baverstock in the Botanical Gardens at Eastern Park on 31 March 1985.

It is interesting to note that there are no records of sightings recorded of the Rose Robin in the vicinity of Geelong in C.F. Belcher's "The Birds of The Geelong District" (1914). He said that "The Rose Robin inhabits the wet country of Gippsland, from Ferntree Gully eastwards".

There certainly have been a considerable number of sightings east of Melbourne in recent times and, in particular, in the Otway Ranges.

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# In Search of the Orange-bellied Parrot

**Dave King**

As part of the regular survey of the Geelong region for the rare Orange-bellied Parrot, I was requested to check-out Salt Lagoon on the Bellarine Peninsula, during the week-end 25/26th July, 1987. There was little prospect of discovering any of these birds in this area, but one can never be sure.

Salt Lagoon is situated on Port Philip Bay, about one kilometre north of St. Leonards, and consists primarily of a shallow saline lagoon surrounded by a strip of reedy swamp development. Until recently the wester section was utilized as a garbage disposal facility which degraded the whole area. Fortunately, this facility has been closed and land fill used to cover the area. Vegetation is now covering the surface, although some exotic pest species have established.

With careful management, the whole area could become a significant wet-land habitat, more importantly during the wetter seasons, as the lagoon dries out during prolonged dry periods.

As a habitat for the Orange-bellied Parrot it is less than adequate due to paucity of the glasswort shrub, Halosarcia. It is, however, a potential refuge area or staging post between the main favoured areas of Swan Bay to the south and the Metropolitan Board of Works Farm to the north west.

The subject survey failed to find any Parrots during a circumnavigation of the Lagoon, between 8.30 and 10.30 a.m. on the 26th July, 1987. Weather conditions were dieal for observation – a slight northerly breeze, temperature 14°C, sunshine with three-eighths cloud cover.

Other birds observed on the Lagoon were a flock of some fifty Chestnut-breasted Shelduck, twelve Pied Stilt and a number of Red-capped Dotterel. Several White-faced Heron were flushed from the reeds on the Lagoon margins. Other species in large numbers were the Goldfinch and Richards Pipit.

It is interesting to contemplate the possible recover of this badly abused wetland habitat. As mentioned above, its use as a garbage depot did nothing for wildlife with exception, perhaps of the scavenging Silver Gull. Grazing of the area at some previous period in time is evident by the presence of old derelict fence lines around the Lagoon perimeter. It was observed at one point that Halosarcia was regenerating. The main danger appears to be African Boneseed becoming well established. As yet the reclaimed garbage depot area apears to be free of this pest species, and acacias are to be seen establishing over the area.

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*Boneseed flowers. Photograph: Trevor Pescott*

# The G.F.N.C. and Boneseed at the You Yangs

**Valda Dedman**

South African Boneseed *(Chrysanthemoides monolifera)* is now recognised as a serious plant pest of drier natural bushland in Victoria, and is a problem in many areas of the state, including Arthur's Seat, the Bellarine Peninsula, eastern Otways coastal areas and the You Yangs Regional Park.

It has become an active coloniser, for it establishes easily on poor soils and can thrive under trees and shrubs where it chokes out native vegetation and even kills the larger trees. This was evident on the northern slopes of Flinders Peak before the 1985 wildfire; boneseed was flowering but many of the Black Wattles and Blue Gums were dead.

Its attractive bright yellow daisy-like flowers are produced in late winter and spring and are followed by fleshy round fruits, up to eight per flower head. These eventually become as hard and dry as old bone (hence the common name) and about the size of a large pea. The single seed, protected by its hard outer coat, may remain viable for ten years unless the outer shell is damaged, after which it germinates rapidly, at any season of the year if there is sufficient moisture available. New plants grow quickly but do not normally flower for eighteen months. Seed is spread by birds, foxes and rabbits, and germination may be induced by a very hot rapidly-passing fire which cracks open the outer case but does not destroy the seed.

Boneseed was introduced into Victorian gardens in 1858, but did not become a problem in bushland until the 1950's, and was declared a noxious weed in 1969, an unusual classification for a non-agricultural pest.

By the early 1960's the weed was spreading rapidly through the You Yangs Forest Park. Control of rabbits, which graze on the seedlings, was stepped up at this time and may have contributed to its spread. The Geelong Field Naturalists Club, formed in 1961, was soon to be involved in eradication measures.

Jack Wheeler was a member of the You Yangs Committee of Management at the time, and he was well aware of the growing infestation of boneseed. Much of the impetus for its eradication came from Jack, who personally carried out experiments in pulling as a control measure, and in the germination rate and long-term viability of the seeds. He pushed, and the Club supported him for boneseed to be declared a noxious weed. Jack carried the Club forward into an understanding of the seriousness of the boneseed problem.

In August 1963, on the third Club excursion to the You Yangs, led by Trevor Pescott, a check was made "on the introduced....... weed African boneseed" north of Big Rock.

The first Boneseed pull took place the following year as part of the excursion of 16 June. As the News-sheet stated:: "Volunteers for pulling in this region (Big Rock) would be welcome, a mattock being the best tool for this work. Remember that every plant pulled is a step towards eradication of this pest".

In the beginning, however, boneseed pulling by the Club was only supplementary to tree planting, which it was thought would prevent the weed from spreading. The GFNC's treeplanting began in 1965 and was organised in conjunction with the Bird Observers Club treeplanting and took place on the same day. The Geelong Field Naturalists had their "own" area, the valley below the Saddle and 500 mixed acacias and casuarinas were planted. Trees and guards were supplied free by the Forests Commission.

Trees were planted primarily to provide cover and food for native birds in areas which had little suitable bird-attractive vegetation. The BOC had been planting trees since 1959 and by 1965 had planted almost 9,000 trees.

The first GFNC treeplanting was not particularly well attended and at the next year's excursion members still needed to learn about the plant:

> "You will be shown how to identify the pest South African Boneseed and some may be willing to conduct some pulling of small plants (near Big Rock). By doing this you will assist in our eradication plan".

So the plan was put into action and was gradually extended and developed. For the next fifteen years there was an annual treeplanting at the Saddle. Saddleback Road used to run right through to East

*New seedlings beneath mature plant.*

*Photograph: Trevor Pescott*

*1963 Excursion*

Flat and the plantings crept down the valley on either side of it. The Saddle car park and picnic facilities were not developed for many years, and instructions in the News-sheet sometimes included warnings about running over newly planted trees and shrubs.

Great care was taken to ensure the plants survived. Detailed planting instructions were given and each plant was protected from rabbits by a wire guard made by inmates of the Geelong Training Prison, and follow-up watering was carried out if necessary. Small seedlings in veneer tubes came from Forest Commission nurseries and species included Pincushion Hakea, Lemon-scented Gum, Neallie Wattle, Bracelet Melaleuca and many others.

A two day event developed. On Saturday afternoon a working bee would be held, which included boneseed pulling, to prepare the site for Sunday's planting. A couple of times dense stands of the weed were mechanically slashed by Cyril Ham, one of the Club's farmer members. This appeared to be quite successful, although it was found later that boneseed usually regrows if not completely pulled out. When Sunday's quota of trees was all planted, usually about 400 hundred trees, the remainder of the day would be devoted to boneseed pulling.

In spite of all efforts boneseed was spreading alarmingly, not only at the You Yangs but in other parts of Victoria also. In 1969 boneseed was declared a noxious week and measures to eradicate it were therefore stepped up.

The Club's control program was also increased, although a note of optimism was present. "The eradication will be coslty and *may take several years*".

In May 1970 we held our first working bee devoted solely to pulling boneseed, and on that day a census was taken. 14,570 plants were pulled and the area declared "safe for another year". At the end of 1972, however, a pull was scheduled for November and this follow-up day has become an annual event.

In 1977 the Club requested the assistance of the Forests Commission for a publicity sign at the Saddle. The GFNC work was by then regarded as a pilot scheme for control by pulling and was a classic example of practical conservation. At the same time we asked for the western flank of the Saddle car park to be cleared and grassed and the parking area to be improved. In the following year the Commission carried out some clearing and mulching with grass hay which proved quite successful.

The Club continued to clear and plant in the valley below the Saddle, sometimes also clearing part way up the northern slope. Eventually the time came to review the whole project; thousands of trees had been planted, millions of boneseed plants pulled and altogether an estimated 10,000 man-hours of work had been put in. Should we continue down the valley and in time join up with the BOC plantings at East Flat, extend up the heavily infested slopes, which seemed a formidable task, or attack an entirely new area?

We settled for a new area and a new concept, and in November 1978 began work on the small peak which adjoins Flinders Peak and overlooks the Saddle. The idea was to start at the top and gradually work our way downwards, "weeding" from the top each year.

The little peak was very different from the valley. Old gnarled Blue Gums found a foothold among huge granite tors and still survived in spite of being almost completely engulfed with boneseed. Once the weed was removed we hoped there would be some natural regeneration of native species and we did not intend to make new plantings.

It was slow at first; sheer hard work pulling out large bushes firmly rooted under rocks, tedious mass-pulling of a solid wall of boneseed plants in "easy" places. But we had the pleasure of finding native plants still surviving. There were seedling Blue Gums, bush peas right at the top of the peak, Rock Correa hanging on between the boulders, rock fern hiding in moist patches, Snowy Mint-bush on a small plateau. As we gave them light and freed them from competition with the invader, they flourished, along with many grasses. Of course each year we had to start again at the top, but the "weeding" became less and the new areas could be attacked.

The peak overlooks to the west an area the Department of Conservation, Forests and Lands has been for several years, using a burn, slash and spray technique. In the late 1970s a "new", highly selective chemical, bromoxynil, was found successful as a control, particularly when the boneseed is in the two-leafed stage, and this, together with 2, 4-D amine has proved effective in controlling boneseed over several hectares adjoining Rockwell Road.

The Department has assisted the Club on the lower eastern slope of the peak by spraying. Unfortunately rocky areas at the top and most of the way down is inaccessible to their mechanised equipment, so they have been all "ours" for hand-pulling. And hand-pull we have – on cold, sleety days, on warm windy ones, singly or in long organised lines – and we felt we were winning.

And then came the January 1985 wildfire. The little peak was almost completely burned; the fire in the Saddle valley was patchy and many, though not all, of the Club plantings survived.

What would be the effect of the fire on the boneseed? Fire assists germination and helps to spread the weed and fire is also used as part of the control program. A great opportunity therefore presented itself to rid the You Yangs of a large part of its boneseed problem, while the weed was at a very juvenile stage.

An experimental aerial spraying was undertaken, but the Department found the results disappointing, since the cover, and therefore the kill, achieved was far less complete than that achieved by ground spraying. It was also costly, and the boneseed kept on germinating over many months. It is a pity that further trials were not carried out and that more resources were not found to step up the control program at this vital stage.

As the Club was not included in the aerial spray we had to keep on hand pulling. So we organised our usual two weekends in an effort to pull as much as possible before the newly germinated weed reached the seeding stage. We also employed a team of Australian Trust for Conservation Volunteers for one week.

We have monitored the return of boneseed on the peak and have been pleasantly surprised at our findings. First, it was clear that all our efforts had not been in vain. Where we had pulled, the boneseed was not as dense as in untouched areas. There has also been another bonus – plants we had not known were present had also been stimulated by the fire and on our first boneseed day in July the granite was splashed with colour from purple Hardenbergia, pink Austral Indigo, grey-green Rhagodia with minute orange berries. The following year the gold of Hedge Wattle was everywhere and the Rock Correas were flowering. In fact, so many plants have reappeared over the past two years that a botanical survey urgently needs to be done.

We have now reached the stage when we must again review the whole project, and we have agreed that our first priority is the peak. We will continue to weed down down from the top and radiate out, and let the natural regeneration continue. Although we have almost "broken through" on the western flank and joined up with Department boneseed eradication areas, the areas we have not been able to pull since the fire have seeded and the building up of seed in the soil has recommenced.

In our original Saddle and valley area there has been a great deal of fire-induced seeding of plants not indigenous to the region, and unless checked the boneseed will again encroach. We will certainly need help if both our areas are to be rehabilitated. We are looking at ways of obtaining grant or special project money to enable us to employ a team to clean up the valley. We will continue to press for boneseed eradication throughout all of the You Yangs Forest Park.

Research is currently being carried out into the biological control of boneseed. We hope it will be successful, but while there is a need, boneseed eradication at the You Yangs will continue to be an important activity of the Geelong Field Naturalists Club.

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# The Grey Currawong as a Vector for Broadcasting African Boneseed

### Dave King

African Boneseed *(Chrysanthemoides monilifera),* proclaimed a noxious weed in Victoria, in 1969, has become a well known scourge of our bushland since its introduction as a garden plant in the mid-1800's. As such it has made its unwelcome presence in the Ocean Grove Nature Reserve, culminating in concerted efforts to eradicate it.

During a walk through the Reserve in October, 1987, a time when the seeds are beginning to set, a Grey Currawong *(Strepara versicolor)* was observed standing in the centre of a fire track. Something about its appearance seemed rather odd. The head was held hunched into its body and the bird showed no inclination to want to fly off as I approached. Having got to within a few metres of the bird I stopped and observed it for some 30 seconds. At this point it proceeded to regurgitate a pellet, and having dropped it, flew off.

Superficial inspection of the pellett revealed that it contained a quantity of seed of the African Boneseed, plus the remains of arthropods. Closer investigation under the microscope revealed a total of 23 boneseeds, all of which had partially digested seed coat that was green, indicating they were not fully mature seeds. The seed coat produced a mucilaginous substance that bound the pellet contents into a moist compact mass. Each seed was hard and resilient. Overall size of the pellet was 40mm long by 14mm diameter.

The remains of the arthropods in the pellet were, as far as could be ascertained, those of two species of Scarab Beetle, a Dragonfly and a Bull Ant. One of the beetles was a dung beetle, possibly of the family *Aphodiinae,* the other possibly of the family *Melolonthinae.*

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# Weekend Campout at Little Desert WVFNCA 28th – 30th August, 1987

### Barry Redman

**Fri. 28th:** We arrived at Little Desert Lodge at 7 p.m. after a 4½ hour drive from Geelong. Set up camp – quick tea and adjourned to a meeting at the Lodge, where we watched a half hour video on the Little Desert produced by BTV6. It showed the layout and conduct of the Lodge and history of the National Park, as well as flora and fauna. Perhaps a good idea to borrow for screening at one of our meetings! No sign of possums or other nocturnal animals after meeting, about 10.30 p.m.

**Sat. 29th:** We expected a din from the dawn chorus of 200 or so bird species supposed to be in the area – but slept through it till 7.45 a.m.

**9 a.m.:** Went to escorted half-day walking tour around the Stringybark Walk. Of the many flowers sighted, some I recall were Flame Heath, (in spectacular proliferation), Common Correa, Greenhood Orchids, Dillwynia. The Ranger mentioned, as had Whimpey, that they were changing their management ideas in relation to burning the bush regularly. Perhaps where possible the best idea was to let it appen naturally, e.g. lightning strike, (especially block burning). White-cheeked Honeyeaters were present, as were hundreds of New Holland Honeyeaters.

**1.30 p.m.:** Drove 10 km to original park (Kiata Lowan) and met the same Ranger as a.m. tour (Clive Brownsea). As he had been at Horsham approximately 8 years, he knew the area well and was very informative. Scarlet Mint-bush was flowering as well as Thorny Bitter-pea, and a small showy Grevillea glabella (which I am told is commercially sold as "Desert Flame").

After the organized tour we went sight-seeing and I found a group of about 10 or so White-browed Babblers noisily scrabbling about under bushes. I also observed a pair of Mallee Ringnecks which appeared to be selecting a nesting hole in a dead tree. (As far south as they come, I believe.)

**Sunday 30th:** 9 a.m. We went off on a 4-wheel drive tour of the central section. Due to loose deep sand in most parts and deep water-filled ruts in others, it was just as well we had 4-wheel drive, which was in constant use! A lone kangaroo, (a Big Grey) was the only mammal seen, but the flora made up for that. We saw flowering: – Blue Boronia, Snow Myrtle, variable Grevillea glabella, a carpet of Baeckea everywhere, Leafless Bitter-pea and Thorny Bitter-pea, Downy Rice-flower, and Gnat, Mosquito and Banded Greenhood Orchids.

Many varieties of wattle were flowering and prolific. When walking in the Crater area, (a sandstone outcrop) with a large basin, we saw a two-metre high Quandong tree with an apple-type fruit, and were informed that this outcrop was to have been quarried to provide road-making materials. Facetiously referred to as "McDonald's Quarry!".

A highlight was the sighting of a pardalote nesting burrow in the side of the wheel rut on the track, and whilst inspecting it we were dive-bombed and noisily warned off by the occupants (a pair of Spotted Pardalotes). A dangerous spot for a home – although the drivers of the regular tours were obviously aware of its location and did not damage it.

Other birds sighted which I recall were a Tawny-crowned Honey-eater, White-eared Honey-eaters, a Fantailed Cuckoo and a Little Eagle. When passing through a red gum swamp we saw a huge nest, about a metre wide and half a metre high, but its occupants were not around.

On returning to camp we found that most people had left, and, reluctantly, after eating and packing, we left about 2 p.m. A most enjoyable experience to discover the desert that isn't!

We still had another highlight to come through! We returned via Mitre Rock, (which we climbed) and then to Mt. Arapiles. Here, after marvelling at the view from the firetower, (because the surrounding country is relatively flat you seem to be able to see forever!) we explored a dense moist gully on the way to another Melville Cave. Here we saw numerous New Holland Honeyeaters, Crimson Rosellas, a Mountain Thrush, Striated Pardalotes, and on the vertical rock face, a pair of White-throated Tree-creepers fossicked.

Reluctantly, as it was swiftly becoming dark, we retreated to the car and returned home, vowing to return in future for further exploration in the area.

# A Canadian Birdwatching in Australia

### Rudolph Koes

*Rudolph Koes, from Canada, was a visitor to our Bird Group meeting in July. He came to Victoria on a birdwatching holiday, and although he was here for only three weeks, he saw 212 species. He travelled on foot, by bicycle, by car and even by canoe up the Barwon River to count Orange-bellied Parrots at Lake Connewarre (this was the very morning after he arrived!).*

*He has sent us a copy of the diary he kept during his stay, excerpts from which we publish here, together with his complete bird list. We are very pleased to have the opportunity to share this experience.*

*Editor's Note.*

**25/7**

After a long, long trip finally in Melbourne where I can see European Skylarks and Australian Magpies from the plane.

**26/7**

Up at 7 to participate in a census of the wintering population of Orange-bellied Parrots, at about 130-140 individuals one of the rarest birds of Australia. A day of slogging through the mud and water around Lake Connewarre, a saltmarsh between Ocean Grove and Geelong. Although we only see 2 parrots, possibly of this species, we have a good day.

**27/7**

Today I decide to bird on my own, at my own pace, at Ocean Grove Nature Reserve, a woodland mainly made up of second growth eucalypts. I got excellent looks at lots of honeyeaters, 2 kinds of currawongs, Kookaburras, Red-browed Firetails, Spinebill, thornbills, etc. In the late afternoon around a pond in town few new birds Little Black Cormorant and a sparrowhawk (extremely tame, probably interested in grabbing a New Holland Honeyeater).

**28/7**

Then to the beach where I sit in the wind (it is cold, overcast and windy now) on wooden steps down the dune face to scope the ocean. Lots of shearwaters (at least 2 species, unidentified, but one was likely Fluttering) and albatrosses (can identify Shy and Black-browed) in the distance. In the evening the bird study group of the Geelong Field Naturalists has a meeting, with a talk on feeding of thornbills.

**30/7**

More pleasant than yesterday. NW to N breeze, partly cloudy, up to 15°C. Biked out via Ocean Grove and Barwon Heads along the coast to the Black Rocks and Breamlea. At low tide – on my way out – mudflats along the Barwon River had hundreds of shorebirds, including Eastern Curlew, Great Knots, Red-necked Stints, Greenshanks, a Pied Oystercatcher and two Double-banded Plovers, plus many Red-capped Plovers. Along the beack west of Barwon Heads I got 4 Hooded Plovers (Keith Dowell, one of last Sunday's census participants, had told me to keep on the lookout for this rarity). At the Black Rocks 6 Southern Giant Petrels (all juv.) feed at a sewage outlet – these birds had been the objective of this trip. About 20 "red caps" plus 30 "double bands" are on the beach at the creek outlet at Breamlea. Again lots of albatrosses and shearwaters in the distance, but I can't identify anything new at that distance.

**31/7**

Rain overnight, but dry in morning. Scattered cloud, strong north winds, cool. Went birding with Keith Dowell who took me to the Moolap salt works, Swan Island and Point Lonsdale. The salt pans are a great place for shorebirds during the northern winter, but they are relatively quiet now. A few large flocks of Pied Stilts and Red-necked Avocets were present, with smaller numbers of Greenshanks, Marsh Sandpipers, Red-necked Stints and Curlew Sandpipers. New was a Horsfield's Bronze-cuckoo and on the bay Great Crested Grebe and Musk Ducks (Corio Bay). On Swan Island we got excellent looks at at least 9 Orange-bellied Parrots, Mistletoebirds and Silver-eyes.

**3/8**

Walk from Breakwater along the Barwon River to Queens Park. In the reeds along the river I soon find several Clamorous Reed Warblers and Little Grassbirds. In town 4 + Rainbow Lorikeets, two of which seem to be inspecting holes in an old tree (to nest?). Two Wedgies circle north of Queens Park and the familiar song of a Song

Thrush sounds from a large garden in Geelong. Between Geelong and Reedy Lake I spot an Intermediate Egret (compared size with Swamp Hen nearby and had good look at length of neck), apparently rather rare here.

**5/8**

Set off by car along the Great Ocean Road. The scenery is spectacular, with highlights the forest and coast at Cape Otway and rock formations such as the Twelve Apostles. Best birds included a "White" Goshawk perched along the road on a telephone wire near Lorne, 2 Field Wrens near Anglesea, Heath Wren between Lorne and Apollo Bay.

**10/8**

Reached Sherbrooke Forest east of Melbourne around 12.30. The trip through the city seemed forever. I walk the Hardy Gully trail and beyond. There is little bird activity between the huge Mountain Ashes and Fern trees, but about 2 km down the track, just before a clearning on a rise I see a Lyrebird display next to the path. I can hear another singing (it mimics among other birds a Kookaburra) and soon I can see three birds, two of which are male, like the first bird. There are some heated chases, which bring the birds running around me at close quarters several times. The other bird may have been a female. Thrilling! Later I see the first male feeding, pulling leaves and branches out of the way with its strong feet. Other birds are: 2 Olive Whistlers, 2 Eastern Whipbirds and more heard (only had glimpses of the birds, but the explosive "eee-whoit!" calls are distinctive) and one red-browed Treecreeper.

Just outside the forest, on the way to Phillip Island I spot some Yellow-tailed Black Cockatoos with some Galahs in a tree.

**11/8**

Arrive at Werribee (Board of Works farms – sewage ponds) at 1.00 and bird till 4.30 – a quiet time of the year, with few shorebirds, but I do find most ducks I had still missed: hundreds of Bluebills and Hardheads, and at Ryans Swamp perhaps 10,000 Pink-eared Ducks. Also new a Sharp-tailed Sandpiper (injured bird), a pair of Red-kneed Dotterels and a pair of Banded Lapwings. Little Grebes, Hoary-headed Grebes, Black Swans, Musk Ducks and various cormorant species are abundant, with Golden-headed Cisticolas and Little Grassbirds common.

R.J. Koes, 135 Rossmere Crescent, Winnipeg, MB. R2KoGi, Canada.

## Species List: Australian (Victoria) 25 July – 13 August

| Name | Date first observed | Location | Notes |
|---|---|---|---|
| Emu | 6/8 | Wyperfield Nat. Park | Only 1 other observation. 8/8 Hattah Lakes. |
| Great Crested Grebe | 31/7 | Corio Bay | Only observation |
| Hoary-headed Grebe | 26/7 | Ocean Grove | Abundant |
| Australasian Grebe | 26/7 | Ocean Grove | Abundant |
| Little Penguin | 10/8 | Phillip Island | |
| Black-browed Albatross | 28/7 | Ocean Grove | Only observation |
| Shy Albatross | 28/7 | Ocean Grove | Common |
| Southern Giant Petrel | 30/7 | Black Rock | 6 birds at sewage outlet – only observation. |
| Shearwater sp. | 28/7 | Ocean Grove | At least 2 species, incl. probably. Fluttering – never close enough for positive identity. |
| Australian Pelican | 25/7 | Between Melbourne & Ocean Grove | Common |
| Australasian Gannet | 28/7 | Ocean Grove | common |
| Darter | 1/8 | Lake Mokoan | One other – Werribee |
| Black-faced Shag | 29/7 | Corio Bay | Most cormorants were common to abundant. Found Blck F. Shag least common. |
| Pied Cormorant | 26/7 | Barwon Heads | |
| Great Cormorant | 26/7 | Lake Conneware | |
| Little Black Cormorant | 27/7 | Ocean Grove | |
| Pacific Heron | 3/8 | Wangaratta | Uncommon |
| White-faced Heron | 25/7 | Between Melbourne & Ocean Grove | Very common |
| Cattle Egret | 25/7 | Between Melbourne & Ocean Grove | Often in large flocks. |
| Great Egret | 26/7 | Lake Connewarre | Common |
| Little Egret | 26/7 | Lake Connewarre | Uncommon |
| Intermediate Egret | 4/8 | Between Geelong & Barwon Heads | Only sighting – 1 bird. i.d. based on size & neck |
| Glossy Ibis | 1/8 | Near Wangaratta | + 7 birds – only observation |
| Sacred Ibis | 26/7 | Lake Connewarre | Abundant |
| Straw-necked Ibis | 25/7 | Between Melbourne & Ocean Grove | Abundant |
| Royal Spoonbill | 26/7 | Lake Connewarre | Fairly common |
| Yellow-billed Spoonbill | 26/7 | Lake Connewarre | Fairly common |
| Black Swan | 25/7 | Between Melbourne & Ocean Grove | Abundant, esp. at Werribee |
| Cape Barren Goose | 11/8 | Rhyll. Phillip Island | 1 bird – only observation |
| Australian Shelduck | 26/7 | Lake Connewarre | Fairly common |
| Pacific Black Duck | 26/7 | Lake Connewarre | Common |
| Grey Teal | 26/7 | Ocean Grove | Common |
| Mallard | 27/7 | Ocean Grove | Only observation – feral |
| Chestnut Teal | 26/7 | Ocean Grove | Locally common |
| Australasian Shoveler | 28/7 | Ocean Grove | Uncommon |
| Pink-eared Duck | 11/8 | Werribee Sewage Farms | + 1,000 birds – only observation. |
| Hardhead | 11/8 | Werribee Sewage Farms | Dozens – only observation |
| Maned Duck | 28/7 | Ocean Grove | Common inland, esp. in NE Victoria |
| Blue-billed Duck | 11/8 | Werribee Sewage Farms | Dozens – only observation |
| Musk Duck | 31/7 | Corio Bay | Locally common, e.g. hundreds at Werribee |
| Black-shouldered Kite | 30/7 | Between Barwon Heads & Breamlea | Fairly common |
| Black Kite | 8/8 | Lake Charm | 3 Birds in Kerang area – only observation |
| Whistling Kite | 26/7 | Lake Connewarre | Fairly common |
| Brown Goshawk | 27/7 | Ocean Grove | Fairly common |
| Collared Sparrowhawk | 27/7 | Ocean Grove | Uncommon |
| Grey Goshawk | 5/8 | Near Lorne | 1 bird, white phase – only observation |
| White-bellied Sea-Eagle | 11/8 | Rhyll, Phillip Island | 1 ad. – only observation |
| Wedge-tailed Eagle | 3/8 | Everton Area | + 8 birds total, incl. 2 over Queen's Park, Geelong. |

| | | | |
|---|---|---|---|
| Little Eagle | 3/8 | Wangaratta area | Uncommon |
| Marsh Harrier | 26/7 | Lake Connewarre | Fairly common |
| Black Falcon | 8/8 | Hattah-Kulkyne Nat. Park | 1 bird – only observation |
| Peregrine Falcon | 6/8 | Lake Hindmarsh | 1 bird – only observation |
| Australian Hobby | 30/7 | Between Barwon Heads & Breamlea | 1 bird – only observation |
| Grey Falcon | 8/8 | Hattah-Kulkyne Nat. Park | 1 bird – well seen – apparently quite rare. |
| Brown Falcon | 25/7 | Ocean Grove | Fairly common |
| Australian Kestrel | 25/7 | Between Melbourne & Ocean Grove | Fairly common |
| Quail | 26/7 | Lake Connewarre | 1 bird – probably stubble |
| Painted Button-quail | 7/8 | Wyperfield Nat. Park | 3 birds – only observation |
| Dusky Moorhen | 25/7 | Between Melbourne & Geelong | Common |
| Purple Swamphen | 26/7 | Ocean Grove | Common |
| Eurasian Coot | 25/7 | Between Melbourne & Geelong | Common |
| Pied Oystercatcher | 30/7 | Barwon Heads | Uncommon |
| Masked Lapwing | 26/7 | Ocean Grove | Common |
| Banded Lapwing | 11/8 | Werribee Sewage Farms | 1 pair – only observation |
| Red-kneed Dotterel | 11/8 | Werribee Sewage Farms | 1 pair – only observation |
| Hooded Plover | 30/7 | Barwon Heads | 4 birds on beach – only observation |
| Double-banded Plover | 30/7 | Barwon Heads | Locally fairly common |
| Red-capped Plover | 26/7 | Lake Connewarre | Common |
| Black-fronted Plover | 2/8 | Near Wangaratta | Only 1 or 2 other observations |
| Black-winged Stilt | 31/7 | Moolap Salt Works | Local – in large flocks |
| Banded Stilt | 8/8 | Between Vinifera & Beverford | + 1,000 at sewage lagoon – only observation |
| Red-necked Avocet | 30/7 | Barwon Heads | Local – in large flocks |
| Eastern Curlew | 30/7 | Barwon Heads | + 5 sightings in total |
| Greenshank | 26/7 | Lake Connewarre | Fairly common |
| Marsh Sandpiper | 31/8 | Moolap Salt Works | + 12 birds – only record |
| Great Knot | 30/7 | Barwon Heads | Several birds – only sighting |
| Sharp-tailed Sandpiper | 11/8 | Werribee Sewage Farms | 1 bird – injured – only sighting |
| Red-necked Stint | 26/7 | Lake Connewarre | Common |
| Curlew Sandpiper | 31/7 | Moolap Salt Works | + 20 birds – a few other observations |
| Silver Gull | 25/7 | Melbourne | Abundant |
| Pacific Gull | 28/7 | Ocean Grove | Fairly common along coast |
| Caspian Tern | 26/7 | Lake Connewarre | Several sightings, incl. 1 bird inland between Vinifera & Beverford |
| Fairy Tern | 28/7 | Ocean Grove | Failry common |
| Crested Tern | 29/7 | Corio Bay at Geelong | Fairly common |
| Feral Pigeon | 25/7 | Melbourne | Common |
| Spotted Turtle-Dove | 27/7 | Ocean Grove | Fairly common |
| Peaceful Dove | 2/8 | Wangaratta area | Common inland |
| Common Bronzewing | 27/7 | Ocean Grove | 1 bird at Nature Reserve – only sighting. |
| Crested Pigeon | 2/8 | Wangaratta area | Common inland |
| Yellow-tailed Black-Cockatoo | 10/8 | Sherbrooke Forest area | + 6 birds – only observation |
| Galah | 25/7 | Between Melbourne & Ocean Grove | Abundant |
| Long-billed Corella | 5/8 | Near Mortlake | 2 birds – only observation |
| Little Corella | 8/8 | Wemen | Hundreds – only observation |
| Pink Cockatoo | 6/8 | Wyperfeld Nat. Park | A few birds – only observation |
| Sulphur-crested Cockatoo | 1/8 | Lerderderg Gorge | Abundant inland |
| Rainbow Lorikeet | 4/8 | Geelong | 4 + birs – only observation |
| Purple-crowned Lorikeet | 6/8 | Lake Hindmrash | 2 or 3 observations |
| Little Lorikeet | 6/8 | Wail | 2 birds – only observation |
| Regent Parrot | 8/8 | Hattah-Kulkyne Nat. Park | + 12 birds – only observation |
| Crimson Rosella | 25/7 | Ocean grove | Common |
| (Yellow Rosella) | 8/8 | Hattah-Kulknye Nat. Park | + 12 birds – a few other observations |
| Eastern Rosella | 27/7 | Ocean Grove | Common |
| Mallee Ringneck | 6/8 | Wyperfeld Nat. Park | Fairly common in mallee country. |
| Red-rumped Parrot | 1/8 | Lake Mokoan | Common inland |
| Mulga Parrot | 6/8 | Wyperfeld Nat. Park | 1 pair – one or two other observations |
| Blue Bonnet | 8/8 | Between Werner & Boundary Bend | 4 birds – only observation |

| | | | |
|---|---|---|---|
| Blue-winged Parrot | 5/8 | Ocean grove | 2 birds – possibly also at Lake Connewarre 26/7 |
| Orange-bellied Parrot | 31/7 | Swan Island | 9+ birds – possibly 2 at Lake Connewarre on 26/7 |
| Pallid Cuckoo | 6/8 | Wyperfeld Nat. Park | Fairly common at Wyperfeld & Hattah Lakes |
| Fan-tailed Cuckoo | 2/8 | Wangaratta | 1 bird – also 1 near Daylesford |
| Horsfield's Bronze-Cuckoo | 31/7 | Moolap Salt Works | Uncommon |
| Southern Boobook | 5/8 | Hamilton | 2 birds – seen frequently heard, 1 other seen. |
| Barn Owl | 5/8 | Between Hamilton & Horsham | 1 other North of Bendigo on 8/8 |
| Tawny Frogmouth | 8/8 | Hattah-Kulkyne Nat. Park | 1 heard |
| Laughing Kookaburra | 27/7 | Ocean Grove | Common, esp. near Wangaratta |
| Willie Wagtail | 25/7 | Ocean Grove | Common |
| Eastern Whipbird | 10/8 | Sherbrooke Nat. Forest | 3 + birds – only observation |
| Chestnut Quail-thrush | 6/8 | Wyperfeld Nat. Park | 1 pair – 1 other observation (possibly same pair) |
| White-browed Babbler | 6/8 | Lake Hindmarsh | Fairly common in Mallee country |
| Chestnut-crowned Babbler | 8/8 | Hattah-Kulkyune Nat. Park | 2 parties – only observations |
| Clamorous Reed Warbler | 4/8 | Geelong | Fairly common along Barwon River |
| Little Grassbird | 4/8 | Geelong | Common at Werribee Sewage Farms |
| Golden-headed Cisticola | 26/7 | Lake Connewarre | Common at Werribee Sewage Farms |
| Rufous Songlark | 2/8 | Wangaratta area | 1 bird – only observation |
| Superb Fairy-wren | 26/7 | Barwon Heads | Abundant |
| Splendid Fairy-wren | 8/8 | Hattah-Kulknye Nat. Park | 1 family party – only observation |
| Rufous Bristlebird | 5/8 | Near Port Campbell | 1 bird – only observation |
| White-browed Scrub-wren | 28/7 | Ocean Grove | Common |
| Chetnut-rumped Hylacola | 5/8 | Between Lorne & Apollo Bay | 1 bird – only observation |
| Calamanthus | 26/7 | Lake Connewarre | 1 bird & nest – 2 birds near Anglesea on 5/8 |
| Speckled Warbler | 9/8 | Daylesford area | 3 + birds – only observation |
| Weebill | 7/8 | Wyperfeld Nat. Park | Fairly common inland |
| Western Gerygone | 4/8 | Geelong | 1 bird in city garden believed to be this species |
| Brown Thornbill | 26/7 | Barwon Heads | Common |
| Inland Thornbill | 7/8 | Wyperfeld Nat. Park | 1 + bird – also at Hattah-Kulkyne Nat. Park |
| Superb Lyrebird | 10/8 | Sherbrooke Nat. Forest | 4 birds – also heard 1 on 3/8 at Paradise Falls. |
| Skylark | 25/7 | Melbourne Airport | Abundant |
| Welcome Swallow | 25/7 | Between Melbourne & Ocean Grove | Common |
| Tree Martin | 1/8 | Lake Mokoan | Fairly common inland |
| Fairy Martin | 26/7 | Ocean Grove | 1 bird – with Welcome Swallow – only observation |
| Richard's Pipit | 26/7 | Ocean Grove | Fairly common |
| Black-faced Cuckoo-shrike | 27/7 | Ocean Grove | Uncommon |
| White bellied Cuckoo-shrike | 2/8 | Wangaratta area | 2 birds – only observation |
| Blackbird | 25/7 | Melbourne | Common |
| Song Thrush | 4/8 | Geelong | 1 bird – only observation |
| Southern Scrub-robin | 7/8 | Wyperfeld Nat. Park | 1 bird – only observation |
| Pink Robin | 27/7 | Ocean Grove | 1 – only observation |
| Flame Robin | 26/7 | Lake Connewarre | Common |
| Scarlet Robin | 27/7 | Ocean Grove | Common |
| Hooded Robin | 2/8 | Wangaratta area | Uncommon inland |
| Eastern Yellow Robin | 1/8 | Lerderderg Gorge | Fairly common |
| Jacky Winter | 2/8 | Wangaratta area | Common inland |
| Crested Shrike-tit | 3/8 | Everton area | Uncommon |
| Olive Whistler | 10/8 | Sherbrooke Nat. Forest | 2 birds – only observation |
| Gilbert's Whistler | 7/8 | Wyperfeld Nat. Park | 1-9 – 1 other observation |
| Golden Whistler | 27/7 | Ocean Grove | Uncommon |
| Rufous Whistler | 6/8 | Wyperfeld Nat. Park | 1 or 2 other observation |
| Grey Shrike-thrush | 27/7 | Ocean Grove | Common |
| Restless Flycatcher | 2/8 | Wangaratta area | Uncommon |
| Grey Fantail | 27/7 | Ocean Grove | Common |

| | | | |
|---|---|---|---|
| Chestnut-rumped Thornbill | 7/8 | Wyperfeld Nat. Park | Common inland |
| Buff-rumped Thornbill | 2/8 | Wangaratta area | A few birds – also several near Daylesford |
| Yellow-rumped Thornbill | 27/7 | Ocean Grove | Abundant |
| Yellow Thornbill | 27/7 | Ocean Grove | Fairly common in Ocean Grove |
| Striated Thornbill | 9/8 | Daylesford area | Several birds – only observation |
| Southern Whiteface | 7/8 | Wyperfeld Nat. Park | 2 birds – 2 other observations |
| Varied Sittella | 27/7 | Ocean Grove | Chrysoptera race fairly common<br>Pileata race – a few observations in Mallee country |
| White-throated Treecreeper | 2/8 | Wangaratta area | Uncommon |
| Red-browed Treecreeper | 10/8 | Sherbrooke Nat. Forest | 1 bird – only observation |
| Brown Treecreeper | 3/8 | Wangaratta area | Common inland |
| Red Wattlebird | 25/7 | Ocean Grove | Abundant |
| Little Wattlebird | 11/8 | Rhyll-Phillip Island | 3 or 4 birds – only observation |
| Spiny-cheeked Honeyeater | 27/7 | Ocean Grove | Fairly common |
| Striped Honeyeater | 8/8 | Hattah-Kulkyne Nat. Park | 1 bird – only observation |
| Noisy miner | 26/8 | Ocean Grove | Abundant, esp. at Hattah Lakes |
| Yellow-throated Miner | 7/8 | Hopetoun | Flock of 5 – only observation |
| Yellow-faced Honeyeater | 26/7 | Ocean Grove | Fairly common |
| Singing Honeyeater | 30/7 | Breamlea | 2 birds – a few other observations |
| White-eared Honeyeater | 27/7 | Ocean Grove | Uncommon |
| Yellow-tufted Honeyeater | 2/8 | Wangaratta area | 1 bird – only observation |
| Yellow-plumed Honeyeater | 6/8 | Wyperfeld Nat. Park | Abundant in Mallee areas |
| White-plumed Honeyeater | 25/7 | Ocean Grove | Abundant |
| White-naped Honeyeater | 27/7 | Ocean Grove | Common |
| Brown-headed Honeyeater | 28/7 | Ocean Grove | Fairly common |
| Tawny-crowned Honeyeater | 5/8 | near Anglesea | 2 birds – a few other observaions |
| New Holland Honeyeater | 25/7 | Ocean Grove | Abundant |
| Crescent Honeyeater | 27/7 | Ocean Grove | Uncommon |
| Eastern Spinebill | 27/7 | Ocean Grove | Uncommon |
| White-fronted Chat | 26/7 | Lake Connewarre | Common near coast |
| Mistletoebird | 31/7 | Swan Island | 1 or 2 – only observations |
| Spotted Pardalote | 26/7 | Ocean Grove | Common |
| Yellow-rumped Pardalote | 7/8 | Wyperfeld Nat. Park | 1 – only observation |
| Striated Pardalote | 27/7 | Ocean Grove | Common |
| Silvereye | 31/7 | Swan Island | Fairly common in flocks |
| European Goldfinch | 26/7 | Lake Connewarre | Common |
| European Greenfinch | 27/7 | Ocean Grove | Fairly common in flocks |
| House Sparrow | 25/7 | Melbourne | Abundant |
| Tree Sparrow | 6/8 | near Horsham | 1 bird – 1 heard in Melbourne of 25/7 |
| Red-browed Firetail | 27/7 | Ocean Grove | Fairly common in flocks |
| Diamond Firetail | 2/8 | Wangaratta area | 1 flock – only observation |
| Zebra Finch | 2/8 | Wangaratta area | 1 flock, including a albino – on other flock at Lake Hindmarsh on 6/8 |
| Common Starling | 25/7 | Melbourne | Abundant |
| Common Mynah | 25/7 | Melbourne | Common around cities |
| Satin Bowerbird | 3/8 | Murmungie Basin | 3 flocks – only observation |
| White-winged Chough | 3/8 | Murmungie Basin area | Fairly common inland |
| Australian Magpie-lark | 25/7 | Between Melbourne & Ocean Grove | Common |
| Dusky Woodswallow | 3/8 | Murmungie Basin | 2 flocks – only observation |
| Grey Butcherbird | 26/7 | Ocean Grove | Fairly common |
| Pied Butcherbird | 8/8 | Hattah-Kulkyne Nat. Park | 2 birds – only observation |
| Australian Magpie | 25/7 | Melbourne airport | Hypoleuca race – abundant<br>Tibicen race – abundant N of Divide. Both races seen together in Great Divide. |
| Pied Currawong | 27/7 | Ocean Grove | Fairly common |
| Grey Currawong | 27/7 | Ocean Grove | Common |
| Australian Raven | 2/8 | Wangaratta area | Common inland |
| Little Raven | 25/7 | Between Melbourne & Ocean Grove | Abundant near coast |

# Honeyeaters and Charcoal

### Gordon McCarthy

On the 25th August last, after having burnt some small branches in the back yard, I observed four New Holland Honeyeaters *(Phylidonyris novaehollandiae)* picking around the area where the ashes had been raked. One bird in particular picked up several small pieces of charcoal 1-2mm in diameter and swallowed them. It then picked up a larger piece approximately 3mm in diameter and eventually swallowed it also. Trevor Pescott had noted this habit among Black Honeyeaters in the Mallee. [1].

It is also known that when Gouldian Finches are kept for captive breeding, they need to be given a supply of charcoal. How many other birds need this supplement to their diet?

Gordon McCarthy
26 Fairbrae Avenue,
Belmont, 3216.

(1. See Geelong Naturalist, 22: 37-39. ED.)

# Snake Island Vegetation

Plants listed at G.F.N.C. Campout, 25, 26 October, 1986.

**FERNS**

| | |
|---|---|
| *Dicksonia antarctica* | Soft Tree-fern |
| *Pteridium esculentum* | Austral Bracken |

**MONOCOTYLEDONS**

**ORCHIDS**

| | |
|---|---|
| *Acianthus exsertus* | Gnat Orchid |
| *Acianthus reniformis* | Mosquito Orchid |
| *Caladenia carnea* | Pink Fingers |
| *Caladenia dilatata* | Green-comb Spider-orchid |
| *Caladenia latifolia* | Pink Fairies |
| *Caladenia menziesii* | Hare Orchid |
| *Corybas sp.* | Helmet Orchid species |

| | |
|---|---|
| *Diuris sulphurea* | Tiger Orchid |
| *Glossodia major* | Waxlip Orchid |
| *Lyperanthus nigricans* | Red-beaks |
| *Pterostylis nutans* | Nodding Greenhood |
| *Pterostylis pedunculata* | Maroon-hood |
| *Thelymitra ixioides* | Dotted Sun-orchid |
| *Thelymitra pauciflora* | Slender Sun-orchid |

### SEDGES, RUSHES, LILIES ETC.

| | |
|---|---|
| *Carex appressa* | Tall Sedge |
| *Centrolepis strigosa* | Hairy Centrolepis |
| *Hypolaena fautigiata* | Tassel Rope-rush |
| *Juncus bufonius* | Toad Rush |
| *Juncus pallidus* | Pale Rush |
| *Lepidosperma gladiatum* | Coast Sword-sedge |
| *Lepidosperma laterale* | Variable Sword-sedge |
| *Lomandra longifolia* | Spiny-headed Mat-rush |
| *Luzula flaccida* | Woodrush |
| *Patersonia fragilis* | Short Purple-flag |
| *Patersonia occidentalis* | Long Purple-flag |
| *Scirpus nodosus* | Knobby Club-rush |
| *Xanthorrhoea australis* | Austral Grass-tree |
| *Xanthorrhoea minor* | Small Grass-tree |

### DICOTYLEDONS

| | |
|---|---|
| *Acacia melanoxylon* | Blackwood |
| *Acacia stricta* | Hop Wattle |
| *Acacia verticillata* | Prickly Moses |
| *Aotus ericoides* | Common Aotus |
| *Apium prostratum* | Sea Celery |
| *Astroloma humifusum* | Cranberry Heath |
| *Avicennia marina* | White Mangrove |
| *Banksia integrifolia* | Coast Banksia |
| *Banksia marginata* | Silver Banksia |
| *Banksia serrata* | Saw Banksia |
| *Bossiaea cinerea* | Showy Bossiaea |
| *Bossiaea prostrata* | Creeping Bossiaea |
| *Brachycome cardiocarpa* | Swamp Daisy |
| *Bursaria spinosa* | Sweet Bursaria |
| *Cakile edentula* | Sea Rocket |
| *Carpobrotus rossii* | Karkalla |
| *Casuarina paludosa* | Scrub She-oak |
| *Casuarina stricta* | Drooping She-oak |
| *Clematis microphylla* | Small-leaf Clematis |
| *Comesperma volubile* | Love Creeper |
| *Correa reflexa* | Common Correa |
| *Cotula coronopifolia* | Water Buttons |

| | |
|---|---|
| *Crassula decumbens* | Spreading Crassula |
| *Dampiera stricta* | Blue Dampiera |
| *Dichondra repens* | Kidney-weed |
| *Dillwynia sericea* | Showy Parrot-pea |
| *Drosera auriculata* | Tall Sundew |
| *Epacris impressa* | Common Heath |
| *Eucalyptus kitsoniana* | Bog Gum |
| *Eucalyptus obliqua* | Messmate Stringybark |
| *Eucalyptus viminalis* | Manna Gum |
| *Exocarpos cupressiformis* | Cherry Ballart |
| *Frankenia pauciflora* | Southern Sea-heath |
| *Hakea nodosa* | Yellow Hakea |
| *Helichrysum scorpioides* | Button Everlasting |
| *Hibbertia fasciculata* | Bundled Guinea-flower |
| *Hibbertia procumbens* | Spreading Guinea-flower |
| *Hibbertia sericea* | Silky Guinea-flower |
| *Hibbertia stricta* | Erect Guinea-flower |
| *Hibbertia virgata* | Twiggy Guinea-flower |
| *Isopogon ceratophyllus* | Horny Cone-bush |
| *Isotoma fluviatilis* | Swamp Isotome |
| *Kennedia prostrata* | Running Postman |
| *Lagenifera stipitata* | Blue Bottle-daisy (Common Lagenifera) |
| *Leptospermum juniperinum* | Prickly Tea-tree |
| *Leptospermum lanigerum* | Woolly Tea-tree |
| *Leptospermum myrsinoides* | Silky Tea-tree |
| *Leucopogon parviflorus* | Coast Beard-heath |
| *Leucopogon virgatus* | Common Beard-heath |
| *Melaleuca ericifolia* | Swamp Paperbark |
| *Myoporum insulare* | Common Boobialla |
| *Olearia lirata* | Snow Daisy-bush |
| *Oxalis corniculata* | Yellow Wood-sorrel |
| *Pimelea humilis* | Common Rice-flower |
| *Prunella vulgaris* | Self-heal |
| *Rhytidosporum procumbens* | White Marianth |
| *Samolus repens* | Creeping Brookweed |
| *Sarcocornia quinqueflora* | Beaded Glasswort |
| *Scaevola calendulacea* | Dune Fan-flower |
| *Sebaea albidiflora* | White Sebaea |
| *Senecio lautus* | Variable Groundsel |
| *Senecio glomeratus* | Annual Fireweed |
| *Solanum aviculare* | Kangaroo Apple |
| *Stackhousia monogyna* | Creamy Stackhousia |
| *Suaeda australis* | Austral Seablite |
| *Tetragonia implexicoma* | Bower Spinach |
| *Tetratheca bauerifolia* | Heath Pink-bells |
| *Viola hederacea* | Ivy-leaf Violet |
| *Viola sieberana* | Tiny Violet |
| *Wahlenbergia gracilenta* | Annual Bluebell |

E.G. Errey, 4 Leonard Street, Belmont, 3216.

- 9 DEC 1987
LIBRARY

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# EDITORIAL

It was reported recently that Orange-belied Parrots have been successfully bred in captivity in Tasmania by Peter Brown, who has had a long association with studies of this endangered species. The breeding program is a small step in the recovery plan for the parrot whose total numbers still appear to be fewer than 200. Work leading up to the management plan has included regular surveys of the Orange-belied Parrot's wintering areas, in which the Geelong Field Naturalists Club has taken an active part. The discovery therefore of a new feeding area on the edge of Lake Connewarre, where a large percentage of the total world population has been observed, is highly significant, and Marilyn Hewish and Jonathan Starks has documented it thoroughly in their article which forms the major part of this issue of the Geelong Naturalist.

The State of the Environmental Report from the Victorian Government, due later this year, will focus on aquatic environment, both fresh and saline, and the Barwon River/Connewarre delta region certainly ranks high in priority for protection.

The Geelong region posesses some of the best acquatic environments in the State ranging from the ocean coasts to bays such as Swan Bay, from wetlands such as the Barwon River – Reedy Lake – Connewarre complex to inland volcanic lakes, and also includes important man-made environments such as the Moolap Salt Works and the MMBW Sewerage Farm at Werribee. We trust the Report will take account of them all. The Geelong Field Naturalists Club will continue to work for their conservation by informing both government and the general public of their ecological importance.

Valda Dedman

# White-browed Woodswallows over the Geelong District, October 1984

**Craig Morley**

On 7 October 1984 while birdwatching in Eastern Park, my attention was taken by calls which I recognized as those of White-browed Woodswallows *Artamus superciliosus*.

At 1500 EST there were approximately 300 overhead, and at 1530 EST a flock of approximately 200.

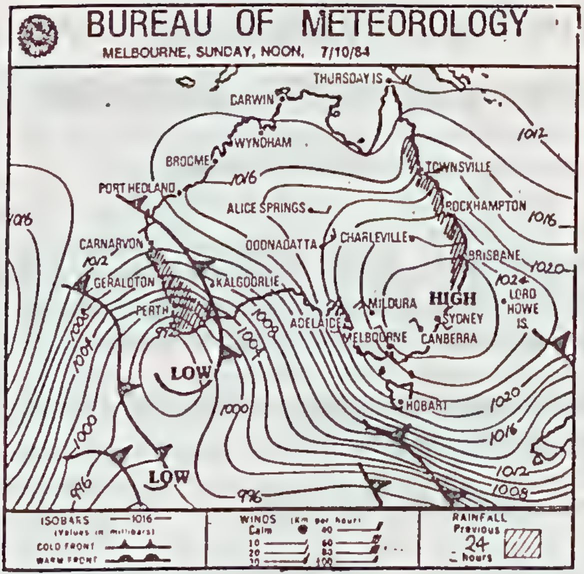
Both these flocks were very high.

At 1600 EST there were approximately 500 birds of which at least 4 well back in the flock were identified as Masked Woodswallows *Artamus personatus*. This third flock was flying at about twice tree-top height (tree-top = 25 metres). No birds were observed to alight on trees in the Park.

The birds in all three flocks were flying west into a stiff north-westerly breeze, and so I cannot confidently conclude that a total of 1000 + birds were observed. I can be certain there were at least 500 birds involved.

This sighting is the first record for the White-browed and Masked Woodswallows over Eastern Park since Belcher (1914) referring to the period 1887-1914 made these comments: "The Masked species I have only met with nesting once, when a pair built on an upper bough of a spreading cypress tree in the Eastern Park", and of the White-browed "In subsequent years (after 1897) they have not appeared in great numbers, though it is usual for a few pairs to come to the Eastern Park every summer, and these probably breed". At 1725 EST on the same day at Newtown, I observed a flock of about 100 White-browed Woodswallows flying west into a stiff north-westerly breeze.

At 1740 EST approximately 20 Woodswallows were observed flying north. On the same afternoon Trevor Pescott observed a



The weather was fine throughout Victoria yesterday. The sky was partly cloudy and the wind was generally from the northwest, fresh in the Western District and light to moderate elsewhere. Sea breezes were reported along the Gippsland coast. Maximum temperatures varied mainly between 20 and 26 degrees although cooler temperatures were reported along parts of the coast and on the ranges. The lowest of 7 degrees was recorded at Mount Hotham while the highest of 27 degrees was reported at Mildura and at Ouyen. After a low of 7.7 at 6.40 am the temperature in Melbourne reached a maximum of 24.1 at 2 pm. A high is centred just east of Sydney. Cold fronts are well south of Tasmania and a low is near the southwest corner of the continent. The high will move slowly eastward causing a strengthening of the northwesterly airflow over Victoria.

*White-browed Woodswallow. Photo: Trevor Pescott* flock of 200 + White-browed Woodswallows over the Ironbark Basin. At 1300 EST Margaret Cameron observed hundreds of Woodswallows (White-browed including one Masked Woodswallow) on Bambra Road, Airey's Inlet. At 1600 EST Margaret Cameron observed hundreds of Woodswallows over her residence in Connor Street, East Geelong.

This is an important observation when combined with the author's observation at the same time in Eastern Park, as the two sites are approximately 750 metres apart. It therefore seems realistic to suggest that there were a thousand or more birds passing over this area at the time.

At 1000 EST on 8 October at Modewarre, John James observed a huge flock of Woodswallows "which numbered at least 1000 possibly 2000". On the same day at approximately 1300 EST, Graham Stanford observed hundreds of Woodswallows over Jervis Oval at Deakin University.

At noon on 7 October a high pressure system of 1026 millibars was centred over Sydney (refer weather map).

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## John Hunt

John Hunt, who died in January this year, will be remembered with affection by many members of the Geelong Field Naturalists Club. His love of nature and his desire to see it preserved for future generations led him to join the Club at its inaugural meeting in 1961, and his willingness to share the work and take on responsibilities resulted in his serving on the Committee for 13 years, the last three as President. He represented the Club on various outside committees, among them the Anglesea Foreshore Committee, the Western Victoria Field Naturalists Clubs Association and the National Parks Association.

In his quiet way he influenced a great number of people, especially children, for whom he had a soft spot. He encouraged the formation of a Junior Group and donated prizes for junior competitions.

He was a man of many parts; a farmer born and bred who at times had to turn his hand to various other trades. The account of his work running a narrow gauge railway at Rubicon in 1926-27 (Geelong Naturalist, Vol. 14, no. 1) reveals a person with a sense of humour and an awareness of the natural environment.

As a farmer on his property at Paraparap he acted as a valuable link between the "conservative" man of the land and new-style conservation-minded naturalists. He encouraged the planting of trees, setting up a plantation of native species and inviting members to "take over" a tree in memory of a loved one. We were always welcome to visit his garden and share with him and his wife, Joyce, the blue wrens and the blue-tongued lizard which they fed and loved, or to see their family of nesting ducks. John and Joyce often shared with members simple, everyday but nonetheless accurate and very valuable observations of the birds and animals around them, the sort of contribution we all can make if we have a mind to do so.

John was a loyal member, who always stood by the Club. He will be remembered as a man of great integrity and a gentle gentleman.

Valda Dedman

*John and Joyce Hunt cutting the Club's 25th Birthday cake. Photo: Trevor Pescott.*

# ORANGE-BELLIED PARROTS AT LAKE CONNEWARRE, VICTORIA

Marilyn Hewish and Jonathan Starks

## SUMMARY

Counts of Orange-bellied Parrots in the Lake Connewarre tidal delta in 1986 and 1987 indicated that it was one the most important of the known wintering sites for this species, holding up to 64 birds. The most important areas were the tidal delta islands and the northernmost section of the mainland, where Parrots were found regularly and in large numbers. Other mainland areas, on occasions, held large numbers and an appreciable proportion of the birds in the entire survey area. Consistently large numbers of Parrots were present in early winter between late May and late June. Thereafter numbers declined, with only a few birds remaining after late August. Birds were still present on the mainland after departure from the delta islands. Parrots were most often found in samphire herbland. High counts in May and June corresponded with the presence of abundant seed on their food plant, *Sarcocornia quinqueflora*. Areas of luxuriant *Sarcocornia* growth attracted Parrots regularly and in large numbers, especially at sites along the lakeshore where progressive sedimentation, and colonisation by saltmarsh plants has occurred. In 1987, the decline in Parrot numbers between late June and late August coincided with the fall of *Sarcocornia* seed and a change-over to seeding *Frankenia pauciflora* as a food source. Thus Parrots used the tidal delta in early winter, utilising *Sarcocornia* as their major food source. When *Sarcocornia* seed was no longer available, some birds were thought to move to Swan Island in July and August, but the majority departed for unknown areas. Priorities for future work include determination of the dates of Parrots' arrival and departure, clarification of island-mainland movements in the June-August period, and recognition and control of factors which could disturb the birds or degrade their habitat.

## INTRODUCTION

The rare and endangered Orange-bellied Parrot breeds in Tasmania and winters on the mainland in coastal south-eastern Australia, with Point Wilson and Swan Island on the western side of Port Phillip Bay being the most important known wintering sites. At Swan Island, Parrot numbers do not reach a maximum until after July. At Point Wilson, the delay in the winter build-up of Orange-bellied Parrot numbers has become more pronounced since 1981 (Jessop & Reid, 1986). Jessop and Reid (1986) suggested that birds were using an unknown wintering area between mid-April and mid-July, before moving to Point Wilson or Swan Island. They proposed that an intensive search for Orange-bellied Parrots be made between March and June, and identified the extensive areas of suitable saltmarsh habitat surrounding Lake Connewarre as the area most likely to hold Parrots at this time. The lake lies approximately 65 km south-west of Melbourne between Geelong and Barwon Heads.

Single Orange-bellied Parrots have been seen at Lake Connewarre in the past (R. Loyn, pers. comm.; G. McCarthy, pers. comm.; Jessop & Reid, 1986), but the earliest evidence that the area was used by larger numbers came in 1985. Four birds were found on 29 June, and 14 on 6 July, at the tidal delta where the lake enters the Barwon River, and seven were seen at the adjoining Salt Swamp on 4 July (Jessop & Reid, 1986).

The importance of this area for the species was more fully recognised when 32 birds were discovered there on 21 June 1986 during the 1986 Winter Wader Count. The majority were found on the islands in the tidal delta. Thus Lake Connewarre had at one stroke been revealed as a wintering site potentially equal in importance to Point Wilson and Swan Island, where the maximum 1986 counts were 27 and 34 respectively (Starks, 1988).

After the initial discoveries, Lake Connewarre was monitored more closely for the species by a series of surveys in 1986 and 1987. This paper presents the results of these surveys, with information on changes in numbers and distribution during winter, and the sites and habitats important for the Parrots.

## SITE DESCRIPTION

Lake Connewarre is part of an extensive wetland system that includes Reedy Lake, Hospital Swamp, Salt Swamp, and the Barwon River and estuary. The lake is a large area (860 ha) of shallow open water, with steep, grassed banks to the north and west. A tidal delta at its outlet into the Barwon River is made up of several islands, separated by a complex of sand and mud shoals, and channels. The tidal delta islands and the lake and river banks to the south and east are covered by extensive areas of saltmarsh vegetation.

## Vegetation

A detailed report on the vegetation of the Lake Connewarre State Game Reserve has been published (Yugovic, 1985), and the vegetation unit classifications used in that report are followed here. Yugovic has indicated that there are four vegetation units present in the survey area. The characteristics of each and the dominant species are summarised below, from Yugovic (1985).

1. *Juncus kraussii* rushland.

*Juncus kraussii* (Sea Rush) forms dense, and sometimes extensive, swards of rushland about one metre tall in areas of moderate salinity. *Distichlis distichophylla* (Australian Salt-grass) is the other major species in this unit, forming a short vegetation cover with the less abundant *Sarcocornia quinqueflora* (Beaded Glasswort).

2. Samphire herbland

*Sarcocornia quinqueflora* is the major species in short herbland (1-15 cm) covering low-lying, water-logged, saline tracts of land.

3. Samphire shrubland

In this category, Yugovic has grouped three structurally similar associations. *Halosarcia pergranulata* shrubland is the association present in the count area (pers. obs.). *Halosarcia pergranulata* (Black-seeded Glasswort) forms a low shrubland about one metre tall in elevated saline areas flooded only by spring tides.

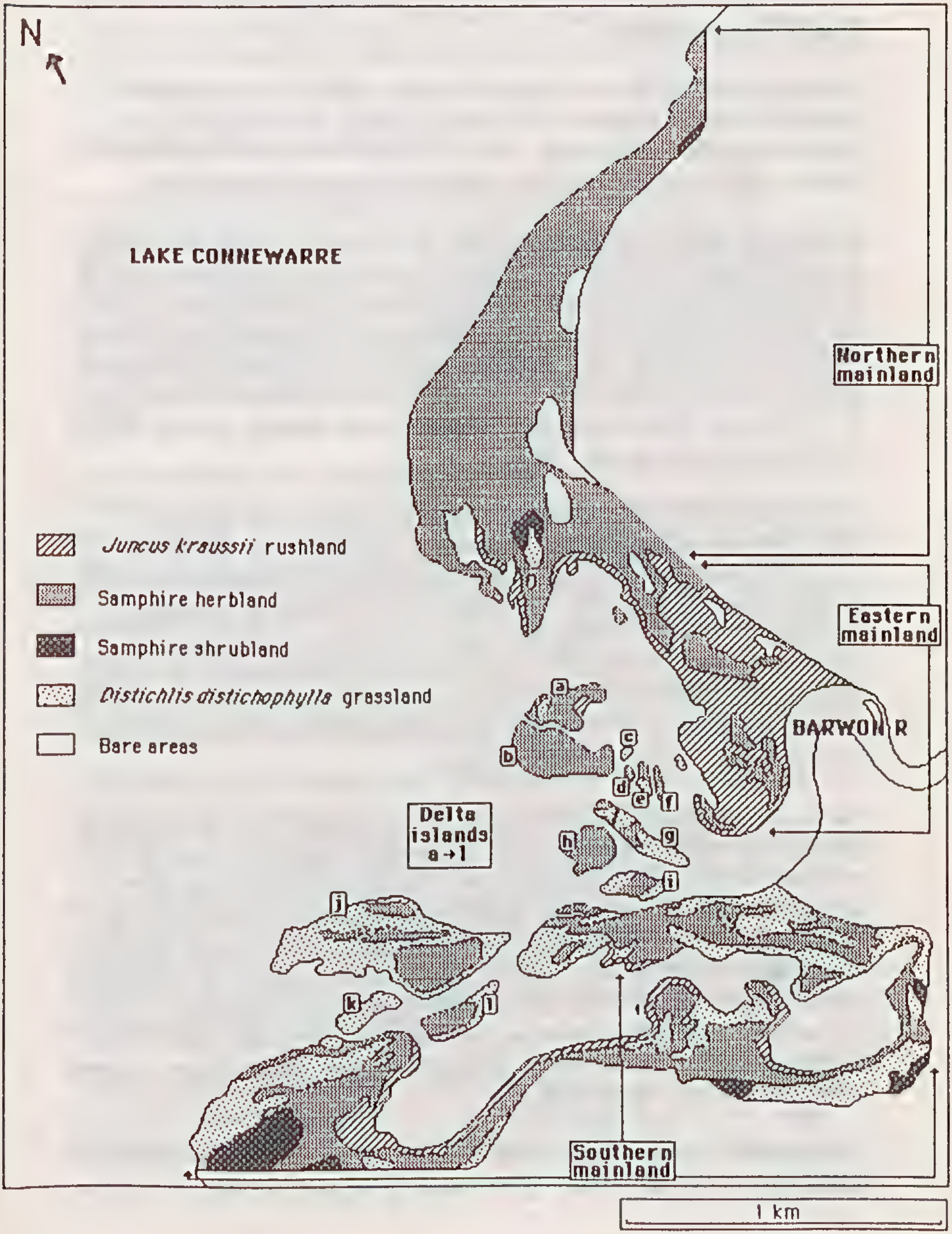
4. *Distichlis distichophylla* grassland

*Distichlis distichophylla* grows as dense grassy hummocks up to one metre tall, mainly occupying areas above the reach of the tide. On some elevated sites, a shrubland of *Muehlenbeckia cunninghamii* (Tangled Lignum) occurs, as single bushes or dense tangled thickets over *Distichlis distichophylla*. *Phragmites australis* (Common Reed) occurs sporadically in areas influenced by freshwater.

## Orange-bellied Parrot food plants

Loyn *et al* (1986) have listed the plants used regularly for food by Orange-bellied Parrots in Victoria. Those present in the count area at

Figure 1: Vegetation units in the survey area (adapted from Yugovic, 1985), and place names used in the text.



Lake Connewarre, the vegetation units in which they occur, and their abundance in each unit (Yugovic, 1985) are listed in Table 1.

## Vegetation distribution

The distribution of the five vegetation units within the survey area is mapped in Figure 1 (adapted from Yugovic, 1985), which also gives the place names used in this paper. The information below has come from Yugovic (1985), and has been supplemented by personal observation.

On the delta islands, samphire herbland and *Distichlis* grassland are the dominant vegetation units. *Distichlis* grassland occurs on more-elevated sites. Samphire herbland occupies wetter areas, bordering channels, pools and shores, and covering central low-lying areas. *Frankenia pauciflora* is widespread throughout the samphire herbland, but, in general, grows less densely than on the mainland. *Suaeda australis* is common and scattered in distribution, favouring the shores on the larger islands. A small area of rushland is present on one island.

The northern mainland is covered by extensive, continuous flats of samphire herbland, with a narrow border of rushland along the southern shore. *Halosarcia pergranulata* shrubland and *Distichlis* grassland occur only in a few small patches. The bare areas are inundated. *Distichlis distichophylla* occurs widely but sparsely throughout the samphire herbland. *Frankenia pauciflora* is liberally spread throughout, with large dense patches and strips occurring locally, particularly along shores of the lake and of some inundated areas. Single bushes or small clumps of *Suaeda australis* are common along the lakeshore.

The eastern mainland is dominated by dense rushland, forming in places a complex mosaic with smaller areas of samphire herbland. The borders between the two units are diffuse, with the transition from samphire herbland to rushland marked by increasing *Distichlis distichophylla* and decreasing *Sarcocornia quinqueflora* densities. *Distichlis distichophylla* is abundant, except in some small wetter areas of samphire herbland along channels, pools and the lake shore, where *Sarcocornia* dominates. Within the samphire herbland, *Frankenia pauciflora* is common and widespread, forming dense patches in places. Single bushes and small clumps of *Suaeda australis* are also widespread.

The southern mainland consists mainly of samphire herbland and *Distichlis* grassland, the former occupying the lower-lying, wetter sites. A narrow strip of samphire herbland borders or parallels the lakeshore for much of its length. There are some small areas of *Halosarcia pergranulata* shrubland, and rushland occurs in a narrow strip along parts of the lake edge. *Frankenia pauciflora* is particularly abundant in the samphire herbland on the southern mainland. *Suaeda australis* is abundant along the lakeshore.

## Vegetation changes since May 1983

The vegetation map of Yugovic (1985) was compiled from aerial photographs taken in May 1983. Ground observations made by counters in 1986-7 indicated that, in some areas, particularly the delta islands, the vegetation distribution has since changed. The borderline between units is difficult to define, and the full extent of the changes will be clarified only by a thorough vegetation survey. The observations below are, nonetheless, relevant to a more detailed understanding of the dynamics of the Parrots' habitat.

Many areas which were identified as samphire herbland in 1983 are now largely *Distichlis* grassland. Where samphire herbland once covered all or most of islands (d), (e), (f) and (h), it is now confined to small patches and strips along the shores. There has also been considerable expansion of *Distichlis* grassland on islands (a) and (b), although the extent of this expansion has not been clearly defined. Dense samphire herbland is now confined to the low-lying central areas and the borders of the channel separating these two islands, while on the slightly-elevated banks around the shores *Distichlis distichophylla* is now dominant.

Some other areas of samphire herbland may be the result of colonisation. Rosengren (1973) has identified areas of the tidal delta where sedimentation occurred between 1947 and 1970. A comparison of his map with that of Yugovic (1985) indicates that this has continued, many such areas having dense patches and strips of samphire herbland along the muddy shores. Patchy plant growth on mudflats extending out from these areas indicates that colonisation is continuing. This process appears to be in progress on islands (c), (d), (e) and (h) and on the northernmost of two peninsulas on the northern mainland.

Areas expanding from sedimentation appear to be colonised by samphire herbland, which is replaced by *Distichlis* grassland as sites are raised further and become drier. Samphire herbland in low-lying areas separated from the lake by higher ground (e.g. the centres of some islands, and most parts of the mainland) has relatively low rates of sedimentation, and has thus resisted invasion by *Distichlis distichophylla*

## METHODS

### Areas surveyed

Surveys of all habitat suitable for Orange-bellied Parrots have never been achieved, because of the large area involved and the limited number of counters. As large numbers of parrots were originally found on the tidal delta islands and adjacent mainland shores, surveys were at first centred there. They have gradually been extended and, since 27 July 1986, almost the entire tidal delta area (see Figure 1) has been searched in monthly winter surveys.

### Survey frequency

After the discovery of 32 parrots on the delta islands on 21 June 1986, monthly surveys in the winters of 1986 and 1987 were organised by the RAOU, as part of its Orange-bellied Parrot survey programme. These have been supplemented by partial surveys of the tidal delta area by interested individuals. Complete surveys were obtained from the entire tidal delta area on 27 July and 17 August 1986, and 23 May, 20 June, 26 July, and 22 August 1987. Partial surveys were obtained on 21 June and 29 June 1986, and 28 May, 14 June, 25 June, 4 July and 6 July 1987.

### Survey procedure

The survey area was reached by power boat and canoe, or by walking along tracks and roads leading to the lakeshore.

Parrots were flushed from low saltmarsh vegetation by walkers travelling abreast. On the mainland, where large areas had to be surveyed, walkers stayed 20 to 50 metres apart, depending on the number of counters and the width of the area to be surveyed. On the broad northern and eastern mainland sections, the shore side was often surveyed on the outward journey and the inland side on the return. On the narrower islands and peninsulas, closer contact between counters was possible, and such areas could often be surveyed by a single person.

Orange-bellied Parrots and other parrot species were counted in flight. Location, flight direction, time of day, and ,if possible, the landing site of flushed birds were recorded, to minimise multiple counting. On days when birds were readily flushed, flew far, and landed among birds already present, the numbers and original locations of the birds were difficult to determine. In such instances, reliable counts were often obtained at the end of the survey, when scattered flocks had been concentrated within a smaller area by converging counters.

Orange-bellied Parrots were distinguished from the generally more numerous Blue-winged Parrots by their buzzing call and bright green upperparts. Few attempts to distinguish males, females and juveniles were made as Parrots rarely perched in view of counters. At sites from which Parrots were flushed, their food plants were sought and examined for seed.

## RESULTS

### Numbers of Orange-bellied Parrots

The survey results are shown in Table 2. Orange-bellied Parrots were found on 12 out of 13 visits. They were present in 1986 from at least 21 June until 27 July, but not on 17 Aug. In 1987, they were present from at least 23 May until at least 22 Aug.

The maximum counts in 1986 and 1987 were 32 (21 June) and 64 (20 June) respectively. The June 1986 count was obtained from a partial survey (delta islands, the southern mainland, and a small part of the eastern mainland ). On 20 June 1987 more than half of the birds were found on the northern and eastern mainland. It therefore seems likely that birds were also present, but undetected, on the mainland in June 1986 and that the 1986 maximum count of 32 was an under-estimate.

### Areas used

Figure 2 shows the locations at which Orange-bellied Parrots were found. Only the positions at which Parrots were first detected are shown: landing sites of flushed birds are not included. On two occasions, exact locations were difficult to determine.

Parrots were found most often and in the largest groups on the northern mainland and the tidal delta islands. The eastern mainland was also used regularly, but only once by high numbers. The southern mainland once held a flock of appreciable size, but otherwise occurrences were sporadic and numbers low.

### Tidal delta islands

Orange-bellied Parrots were found on the tidal delta islands on five of the ten occasions on which they were surveyed. The maximum count was 29 on 20 June 1987, representing 45% of the birds counted on that day. Groups ranged in size from two to 22 birds, and were always found within ten metres of the shore, even on the larger islands.

Table 3 shows that six out of the twelve islands (a, b, c, e, g, h) held Parrots at some time during the surveys. There was a tendency for large numbers of birds, often the majority of the island 'population', to concentrate on a single island. The islands (g), (b) and (h) held the largest numbers. Twice, Parrots were found in comparatively large numbers on islands that were not used on other surveys. Islands (a), (b) and (e) were used more consistently than the others, but only on (b) were numbers high.

### Northern mainland

In 1986, the northern mainland was not visited until late July, when no birds were found there. The 1987 surveys indicated that most birds had left the lake by this date.

Parrots were found on the northern mainland on all visits in 1987. They were most often found within 200 metres of the lakeshore. There was a concentration of records on and around the two peninsulas which enclose a shallow inlet. Groups often consisted of 10 or more birds. The maximum count for the northern mainland was 63, obtained on 25 June 1987, when it probably held all or most of the Parrots in the area.

### Eastern mainland

The eastern mainland held Parrots on five out of ten visits. The maximum count was 21, obtained on 20 June 1987, when this area held 33% of the population in the survey area. Parrots were usually found within one hundred metres of the shore.

## Southern mainland

Parrots were found on the southern mainland on two out of eight visits. The maximum count was 20 on 27 July 1986, when this area held all of the birds present in the survey area. On this occasion, 16 were seen in one flock, but otherwise flocks did not exceed four birds. All sightings were made close to the lakeshore.

## Changes in numbers and distribution during winter

In 1987, 60 Parrots were already present by late May, and they used the mainland and islands in approximately equal numbers. Although consistently high counts between 23 May and 25 June suggested that birds were not entering or leaving the survey area, there was considerable movement within it, as birds used different mainland areas and islands on consecutive counts. In both years, the island 'population' decreased after 20-21 June, and no birds used the islands after 26-27 July. Not all birds left the survey area simultaneously, and the mainland held the last birds before final departure. The timing of departure varied between the two years, and numbers were low from 17 Aug in 1986 and 26 July in 1987.

We have no precise knowledge of the timing and pattern of departure between late June and late July, but we can speculate on the basis of partial surveys in that period.

In 1986, departure from the islands corresponded with a temporary increase of 20 birds in an area of the southern mainland. However, movement between mainland sites occurred during this period in 1987, so that it is possible that these birds came from other parts of the mainland rather than the islands.

In 1987, the 63 birds counted on the northern mainland on 25 June may have been the only ones present in the survey area, since the number is similar to that recorded in the two previous complete surveys. This count indicated an increase in the mainland count of at least 28 birds between 20-25 June, and it is likely that this resulted from movement of the entire island 'population' to the mainland. This is suggested by two pieces of evidence.

1) The increase on the mainland (≥28 birds) corresponded almost exactly to the island count (29) on the previous complete survey.

2) The influx onto the mainland occurred within the period in which all Parrots left the islands (20 June-26 July). There were indications that the two events were simultaneous. On 25 June, the date of the increased mainland count, no Parrots were found on any of the islands which had held birds on 20 June, indicating the departure of 29 birds from the most important islands, and perhaps from the islands as a whole.

If there were no Parrots on the islands on 25 June, the partial count of four on 6 July indicates a re-appearance of birds on the islands, and back-and-forth movement between islands and mainland prior to final departure.

## Vegetation units favoured by Orange-bellied Parrots

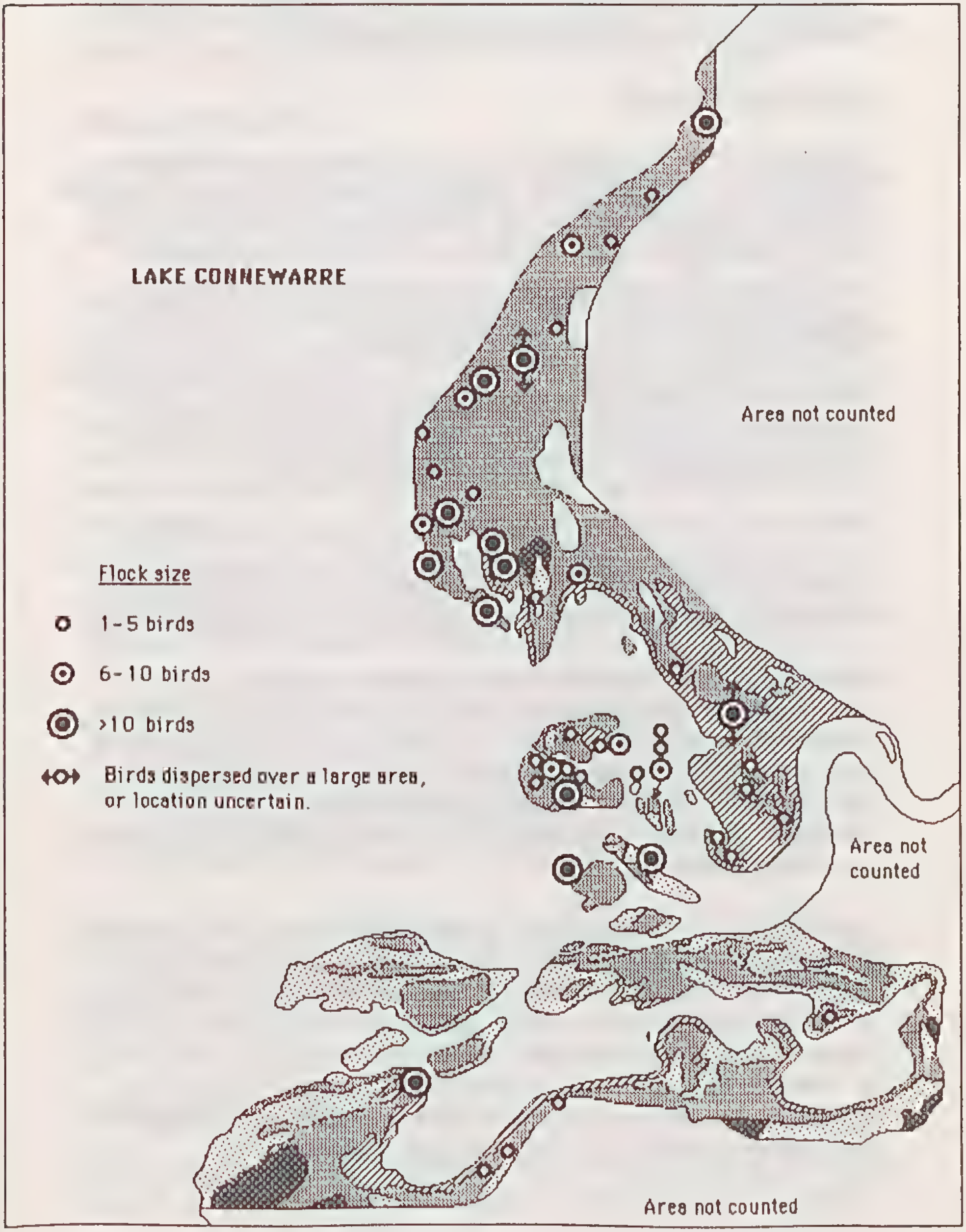
The vegetation units used by Parrots were determined by marking the locations of Parrot sightings on the vegetation map of the area (Figure 2). In two instances, the locations were not accurately known, but in one of these (30 birds on the northern mainland, 4 July 1987) there was only one vegetation unit in the area over which Parrots were scattered.

All sightings but two occurred in areas marked as samphire herbland. On the northern mainland, particularly favoured by Parrots, the samphire herbland occurs as a continuous, extensive tract. However, in other places, Parrots were found, occasionally in large numbers, in small areas of samphire herbland bordering or within other vegetation units.

The only occurrences of birds outside samphire herbland, were of two groups (five birds on 23 May 1987 and six birds on 20 June 1987) in a small area on island (a) marked as rushland. Parrots were never found in extensive areas of rushland, in *Distichlis* grassland, or in the few small areas of *Halosarcia pergranulata* shrubland.

The distribution of Parrots within the survey area was therefore linked to that of the samphire herbland, in which three of their important food plants are most abundant: *Sarcocornia quinqueflora, Sueeda australis and Frankenia pauciflora*.

Figure 2: Locations of Orange-bellied Parrot flocks in 1986-7 surveys, and vegetation units at these sites.



## Observations of vegetation in the count area

Counters made observations on the density and seed production of these food plants in the survey area and at Parrot locations.

### Early winter (May-June)

In early winter 1987, examination of a few areas of samphire herbland indicated that *Sarcocornia* and *Suaeda* were seeding prolifically, and that *Frankenia* was flowering sparsely. *Sarcocornia* growth was most lush beside channels, pools and shores, where the stratum was muddy and water-logged. Parrots were found regularly and/or in large numbers in such areas: in particular, the two peninsulas enclosing an inlet on the northern mainland; along the shores of islands (a), (b), (e) and (h); and beside a pool in the centre of island (g). The peninsulas and islands (e) and (h) have been identified as areas where the tidal delta is growing by sedimentation (Rosengren, 1973), and are characterised by a luxuriant growth of *Sarcocornia*, most likely recently established.

Parrots were never found in samphire herbland where the ground below was flooded to a depth of more than one centimetre. As they feed from the ground (Loyn *et al*, 1986), this may indicate more an aversion to getting wet than any deficiency in the quantity or quality of *Sarcocornia* growth.

Parrots were found in rushland and in samphire herbland/rushland transition zones infrequently, and only where *Sarcocornia* occurs in mixed growth with *Distichlis* between clumps of rushes. Their absence within large tracts of rushland and *Distichlis* grassland could be explained by low *Sarcocornia* density. These observations indicate that Parrots preferred areas with the most luxuriant growth of *Sarcocornia*, provided that it was not flooded.

By contrast, there was no obvious correspondence between the occurrence of Parrots and the distributions of either *Suaeda* or *Frankenia*. When Parrots were found where seeding *Suaeda* was present (e.g. on the shores of island [b] in early winter 1987), they were not flushed from the *Suaeda* bushes, but from the *Sarcocornia* herbland between them. *Frankenia* was not observed to be seeding in early winter 1987. In May-June, Parrots were found regularly in large numbers in areas where *Frankenia* growth was generally sparse (e.g. on the tidal delta islands).

Parrot distribution in early winter 1986-7 can be explained by the distribution and density of *Sarcocornia quinqueflora*, and this was probably their major food source. It is possible that *Suaeda australis* was used to a lesser extent, as observations were brief and infrequent.

Late winter (July-Aug)

By late July, when most Parrots had left the area, most of the *Sarcocornia* seed had dropped. Although counters noted that Parrots were on samphire herbland in July, no observations of food plants were made at the sites.

On 22 Aug 1987, all the *Sarcocornia* examined had dropped its seed. Patches of *Frankenia* within the samphire herbland were easily identified even from a distance at this time of year, as green areas in the pale expanse of dried *Sarcocornia* stems. Seven Orange-bellied Parrots were found at two sites, both of which were characterised by an unusually dense growth of seeding *Frankenia*. *Frankenia* was probably the major food source, but supporting many fewer birds than *Sarcocornia* had early in the season.

No observations were made during the change-over period between late June and late August, as *Sarcocornia* seed dropped and the *Frankenia* seed ripened. The birds present in this period may have been feeding on late-seeding *Sarcocornia*, early-seeding *Frankenia*, or both during a period of overlap. The sharp decline in Parrot numbers by 26 July 1987, corresponding with the observed fall of *Sarcocornia* seeds, and a count on that date similar to that on 22 Aug, suggests that the Parrots were dependent on *Frankenia* by late July. The different timing of Parrot departure from the count area in 1986 may have arisen from differences in the timing and scale of *Sarcocornia* and *Frankenia* seed production.

On 22 Aug 1987, a search was made of a small area of *Sclerostegia arbuscula* along the Barwon River, since this plant is known to be a major food source from late August onwards at Point Wilson (Loyn *et al*, 1986). No Parrots were found.

## Feeding site fidelity

Although some areas were used regularly by Parrots (e.g. the peninsulas on the northern mainland, and some islands), Parrots were found at exactly the same sites on successive surveys on only three occasions: on island (a), five birds on 23 May and six on 20 June 1987); on island (b), nine birds on 23 May and two on 20 June 1987; and on island (e), three birds on 21 June and six on 29 June 1986.

### Reaction to disturbance

Orange-bellied Parrots feeding in dense samphire herbland were generally silent and remained undetected by counters, until approach caused the birds to take flight. Take-off usually occurred without warning. As they were flushed, the birds called repeatedly, and often continued this in flight. In general, Parrots did not react to close approach by counters in canoes, unless they had already been disturbed by walkers.

On two counts held in extremely windy conditions (21 June 1986, 23 May 1987), the birds allowed a very close approach. At such times, the first indication that Parrots were nearby was a soft and intermittent buzzing call from within the vegetation. The first birds were flushed 10-15 metres away. With each step, a counter would force a few more birds to fly, and sometimes the last ones erupted from the vegetation from only two or three metres away. Therefore, counters thoroughly searched areas where Parrots were found. In windy conditions, Parrots' flights were low and of short duration, and birds moved short distances to avoid counters but did not leave the area altogether.

On other occasions, particularly when there was little wind (e.g. 20 June 1987), the Parrots were nervous and flew readily. The counters' work was made more difficult on such days by the Parrots' high, erratic and prolonged flights; by their numerous 'aborted' landings; by groups and stragglers breaking away from the main party on take-off and in the air; and by flocks landing among and disturbing other birds. Parrots may have been nervous because they could hear counters approaching from a considerable distance in the calm conditions. However, the count on 20 June 1987 occurred prior to the Parrots' departure from the islands and an influx onto the northern mainland, and their restlessness may have been a sign that a crossing or movement back-and-forth between the islands and the mainland was imminent or in progress.

Occasionally, Parrots returned to their original feeding location after being flushed, even if they had flown a great distance. In most instances, however, birds flushed from a feeding area did not return during that survey, and were detected at their landing places a considerable time after their move.

Parrots were observed perching only after they had been disturbed. On one occasion, birds disturbed by walkers then perched briefly on hummocks of *Distichlis distichophylla* when a canoe passed close by. On three occasions, Parrots perched in dense Tangled Lignum thickets on islands (a) and (g) after being disturbed by walkers. Birds did not usually perch in sight after landing, but disappeared beneath the dense cover of *Sarcocornia* This tendency to flush abruptly and land among low cover is not surprising, as bushes suitable for perching are uncommon and scattered in distribution in the areas favoured by Parrots.

Inaccessibility probably makes the Lake Connewarre tidal delta less susceptible to disturbance than the other important wintering sites for Orange-bellied Parrots, Point Wilson and Swan Island. Disturbance to Parrots was not observed to occur in response to raptors, grazing stock, power boats or hovercraft passing down the river channel, or light aircraft overhead. Walkers other than counters were rarely seen. Access for motor vehicles, a source of disturbance at Point Wilson (Lane & Kinhill Planners, 1979a; Loyn *et al*, 1986), is extremely difficult. Although there are vehicular tracks to the lakeshore they are generally inundated in winter. Passage from the river to the lake is difficult for power boats because of shoals. It is not known whether duck-hunters cause disturbance to the Parrots. One person carrying a shot-gun was seen on the southern mainland on 23 May 1987.

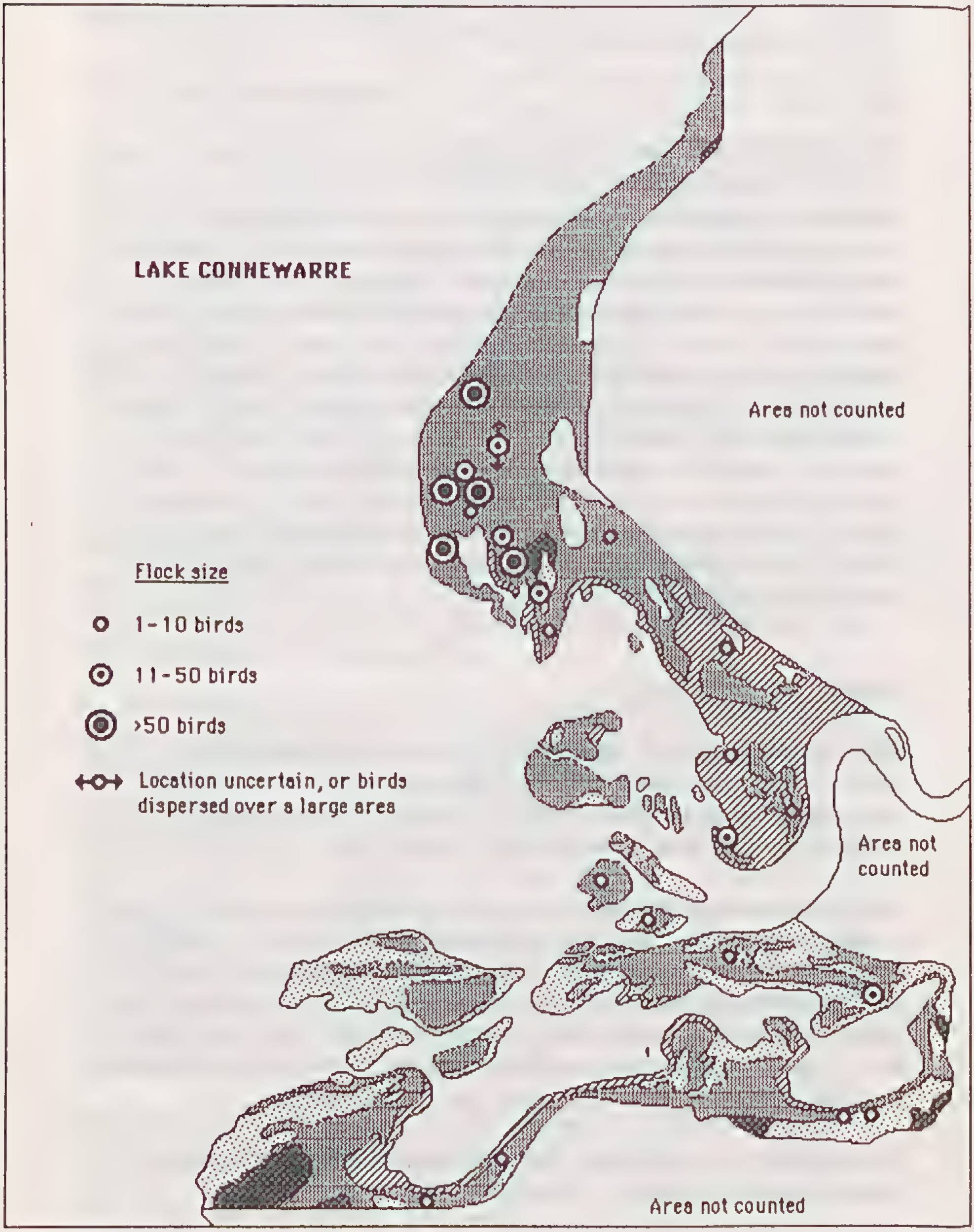
## Potential competitors

Of the three bird species which eat similar foods to Orange-bellied Parrots (Loyn *et al*, 1986), only two were found in the survey area regularly and in appreciable numbers; Blue-winged Parrot *Neophema chrysostoma* and House Sparrow *Passer domesticus*.

Counts of Blue-winged Parrots in the winters of 1986 and 1987 are shown in Table 4. They were particularly abundant in 1987, when a maximum count of 142 was obtained on 20 June. Figure 3 shows the locations of Blue-winged Parrot flocks found in the survey area. Sightings were widely scattered over the mainland areas, and Blue-winged Parrots were found most frequently and in the largest flocks (up to 120 birds) on the northern mainland. They generally avoided the tidal delta islands.

The vegetation associations at sites where Blue-winged Parrots were found are shown in Figure 3. Blue-winged Parrots shared with

Figure 3: Locations of Blue-winged Parrot flocks in 1986-7 surveys, and vegetation units at these sites.



Orange-bellied Parrots a preference for samphire herbland, especially on the northern mainland where it is extensive and unbroken. However, Blue-winged Parrots were able to use a greater range of habitats, and were also found in extensive areas of *Juncus kraussii* rushland on the eastern mainland, and even occasionally in *Distichlis* grassland where it bordered samphire herbland.

The only area in which both Blue-winged Parrots and Orange-bellied Parrots were found regularly and in large numbers was around the two peninsulas on the northern mainland, but flocks rarely intermingled. If both species were flushed simultaneously, there was often some mingling of flocks in the air.

On two occasions when mixed species flocks were found, they involved small numbers of Orange-bellied Parrots on the periphery of larger flocks of Blue-winged Parrots feeding in samphire herbland. A difference in behaviour was observed. The Blue-winged Parrots became restless and flew up to perch while counters were still some distance away; in the first instance, on hummocks of *Distichlis distichophylla*, and in the second, on fence wires. Most of the Blue-winged Parrots had already gone before the Orange-bellied Parrots took flight abruptly and unexpectedly. On the other occasion when mixed flocks were reported on the northern mainland (4 July 1987), the composition of the flocks and their behaviour was not noted.

Blue-winged Parrots are unlikely to suffer from any competition for resources, as they are able to use a greater variety of habitats, and occur both coastally and inland in Victoria. At Lake Connewarre, competition is probably not a problem for Orange-bellied Parrots in early winter, when large areas of Sarcocornia are seeding abundantly and the birds are able to use the tidal delta islands. The only area where competition was a possibility in 1987 was on the northern mainland, where both species used the samphire herbland in large numbers. Competition here seems unlikely, as the available area of samphire herbland is so large. However, if, as seems likely, Orange-bellied Parrots favour only the densest areas of *Sarcocornia*, and not all plants are carrying seed at a suitable stage of ripeness at any one time, then resources may be limited. The infrequency with which both species were found feeding together may indicate that competitive exclusion of Orange-bellied Parrots occurs, especially where large numbers of Blue-winged Parrots occupy an area where resources are limited.

In late winter, both species were feeding on densely-seeding *Frankenia* on the northern mainland. On 22 Aug 1987, only 42 Blue-winged Parrots and seven Orange-bellied Parrots were present in two small areas, suggesting that this was a more limited resource than *Sarcocornia*. The larger of the two areas was occupied by the Blue-winged Parrots with one Orange-bellied Parrot on the edge, and the smaller by a flock of six Orange-bellied Parrots. When counters returned to the smaller area, Blue-winged Parrots were present (presumably some of the flushed birds from the flock of 42) but not Orange-bellied Parrots. Thus, if Orange-bellied Parrots are excluded by Blue-winged Parrots, this area was no longer available to them.

It is therefore possible that the marked decline in Orange-bellied Parrot numbers after late July arose not only from the reduced availability of food, as birds became dependent on small areas of seeding *Frankenia*. Competition with the more numerous Blue-winged Parrots for this limited resource may also have been important at this time.

House Sparrows were seen regularly in flocks of up to 50 or more, usually perched in Tangled Lignum. They were not seen feeding and their impact on the samphire herbland is not known.

Small numbers of cattle were observed grazing in winter on the saltmarsh on the northern and southern mainland. Numbers may increase in the warmer months, and large areas of saltmarsh on the eastern and northern mainland were trampled and the ground below was pitted by hoofmarks. Orange-bellied Parrots were not found in heavily-grazed areas. This was probably partly because the *Sarcocornia* density was lower, and partly because, in the deeply-pitted ground, seepage formed pools below the saltmarsh.

## Potential predators

Counters found no evidence of attempted or successful predation on Orange-bellied Parrots at Lake Connewarre in 1986 and 1987.

Potential predators seen by counters included several species of raptors ( Black-shouldered Kite *Elanus notatus*, Whistling Kite *Haliastur sphenurus*, Little Eagle *Hieraaetus morphnoides*, Marsh Harrier *Circus aeruginosus*, Brown Falcon *Falco berigora*, Australian Kestrel *Falco cenchroides* and Barn Owl *Tyto alba*), but these were not observed to disturb or pursue Orange-bellied Parrots. Introduced Foxes ( *Vulpes vulpes*) were observed on two occasions, on islands (i) and (j).

## DISCUSSION

In 1986 and 1987, surveys in the Lake Connewarre tidal delta have shown clearly that this area is of great conservation signifance for the rare and endangered Orange-bellied Parrot. The maximum count in 1987 exceeded those obtained at all other wintering sites, including those thought to be of greatest importance for the species; Point Wilson and Swan Island.

Parrots were found regularly and/or in large numbers on the northern mainland, particularly around the two peninsulas, and the tidal delta islands, particularly islands (a), (b), (e), (g) and (h). However, the other mainland areas and islands should not be ignored in any consideration of areas worthy of protection. Although sightings were less regular on the eastern and southern mainland, each on occasion held large numbers of birds and an appreciable proportion of the survey area population. Large numbers of birds, often the majority of the island 'population', were often found on a single island. This, together with their extensive and unpredictable movements between islands, raises the possibility that any island, even one which up until now has never or rarely held Parrots, may temporarily become of major importance for the population. The location of the roost site is not known, and some effort should be directed towards finding it, so that it can be adequately protected.

These two years of counts have provided a broad picture of how Orange-bellied Parrots use the Lake Connewarre tidal delta area, and indicated where increased information will reveal most about the habits and movements of the Parrots.

Lake Connewarre is important for the Parrots early in the winter season, and numbers are consistently high there before they build up at Point Wilson and Swan Island. Complete surveys early in the season (March, April and May) are needed to determine the arrival date at the lake, which may coincide with departure from the breeding and passage areas and arrival at other wintering sites.

The period between late June and late July is a time of considerable change in the numbers and distribution of birds in the survey area. Birds were still present on the mainland, after they had stopped using the tidal delta islands, and movement from the islands to the mainland before departure from the survey area has been suggested as a likely scenario. More frequent complete surveys in July are needed to clarify and understand the Parrots' movements at this time.

In addition, it would be useful to know with greater accuracy the main period of departure, which occurs between late June and late August. This would enable a more accurate assessment of when to search for corresponding increases elsewhere. The date of final departure of the last few birds from the lake is perhaps of less interest, as the other wintering sites have become more important at this time.

It is not known whether the occurrence of Parrots at the lake is a recent phenomenon, or whether they have always been present but undetected. They are unobtrusive and not likely to be detected except by walkers, of which there are few in the winter. Regular Winter Wader Counts have been held in the tidal delta since 1981, but these have been made from a canoe, which does not generally disturb the Parrots. The key to the discovery of large numbers of birds during the 1986 Winter Wader Count may lie with the extremely cold and rough conditions, which forced counters to spend time on the islands walking to wader roosts and sheltering. Lake Connewarre may always have been the early-winter site for the Parrots using Swan Island, where an increase of approximately 20-40 birds has occurred in late-winter since regular surveys began (Jessop & Reid, 1986). It is, however, difficult to imagine how the Parrots could have evaded detection for so long if the lake is a traditional wintering site for 60 birds. There may have been an increase in recent years, corresponding to the more pronounced delay in build-up of numbers at Point Wilson since 1981 (Jessop & Reid, 1986).

The food sources used by the Parrots at the lake were the same as those observed by Loyn *et al* (1986) at Point Wilson, where *Sarcocornia* was the major food plant in early winter (May and June), and birds moved onto seeding *Frankenia* in July and August. Other major food sources at Point Wilson were *Halosarcia halocnemoides* (Grey Glasswort) in July and August and *Sclerostegia arbuscula* (Shrubby Glasswort) from late August to early November (Loyn *et al*, 1986). The rarity or absence of these food plants in the Lake Connewarre survey area explains the sharp decrease in numbers of Parrots between late June and late July.

The Parrots' continual movement within the survey area would enable them to efficiently exploit the resources available at a particular time, as they could choose the best areas of *Sarcocornia* or *Frankenia* growth, in terms of both plant and seed density. In addition, their stay at the lake would be prolonged, as they moved from early-seeding to late-seeding *Sarcocornia*, and eventually to *Frankenia*, as the season progressed. It is interesting that birds persisted at feeding sites only in early winter, when *Sarcocornia* seed was most abundant, and that low numbers of birds were involved; factors which would enable feeding sites to support birds for a longer period than usual.

The Parrots' persistence on the mainland after they had stopped using the islands indicates that the food supply declined earlier on the islands. *Frankenia*, which is used in late August, is more abundant on the mainland than on the islands. It is, however, possible that *Sarcocornia* on the mainland retains its seed for longer. The differences in the use of the two areas will remain unexplained until feeding observations are made between late June and late August.

Point Wilson supports Parrots throughout the entire winter season because of the diversity of food plants available and the resulting continuity of seed production from various species (Loyn *et al*, 1986). Lake Connewarre, by contrast, appears to provide only a single major food source, *Sarcocornia*, in great abundance. Thus, very large numbers of Parrots can use the tidal delta in early winter, but they must move to other wintering areas containing late-winter food plants after late July. The departure of the 58 birds from the lake between 25 June and 26 July corresponded with an increase of 27 at Swan Island, but numbers remained constant at Point Wilson (Starks, 1988). It is therefore likely that approximately half of the birds at the lake moved to Swan Island. The destination of the remaining 31 has not yet been identified, but may be discovered by a search at the appropriate time of year in areas containing *Frankenia* (July-Aug), *Halosarcia halocnemoides* (July-Aug), and *Sclerostegia arbuscula* (mid Aug-early Oct). The numbers of birds using the lake may not be limited by food supply at the lake itself, but by resources at the other feeding sites used in July and August, when plants of more restricted distribution (e.g. *Halosarcia halocnemoides*) become important as food sources (Yugovic, 1984; Loyn *et al*, 1986).

If the Parrot population is to be maintained at its present level, disturbance, destructive influences and habitat degradation should be minimised. The presence of foxes on the tidal delta islands is disturbing. At Point Wilson, they have been observed stalking Orange-bellied Parrots (Brown & Wilson, 1984), and there was evidence of fox predation on Blue-winged Parrots at a roost used by both species (Jessop & Reid, 1986). Unfortunately it would be very difficult to eradicate them.

The effect of duck-hunting at the lake should be examined. The hunting season usually ends in late May, and thus overlaps the period when Parrots are present. At Point Wilson, shot-gun blasts up to 850 m away alarmed Parrots and caused them to leave areas (Loyn *et al*, 1986).

Saltmarsh which had been heavily grazed and trampled by cattle was not used by Parrots. Samphire herbland has a moderate to high susceptibility to disturbance and areas laid bare by cattle may remain so for many years, and become susceptible to invasion by weeds (Yugovic, 1985). At Point Wilson, grazing by sheep and rabbits in samphire herbland reduced considerably the amount of food available to Parrots (Lane & Kinhill Planners, 1979b). Stock access to the tidal delta should be prevented, to protect the samphire herbland used by the Parrots.

Natural changes in the vegetation caused by sedimentation are probably unlikely to be detrimental. Areas of land growth along the lakeshore support a progressive outgrowth of *Sarcocornia*, which is particularly attractive to Parrots. This probably compensates for the loss of some areas of samphire herbland to *Distichlis* grassland. Engineering works which would alter the hydrology in the tidal delta should be assessed with the greatest caution before they proceed, as they can have dramatic effects on the vegetation (Yugovic, 1985).

## RECOMMENDATIONS

1. Complete surveys in March, April and May to determine the Parrots' date of arrival at the lake.

2. More frequent surveys between late June and late August, to clarify movements between the islands and the mainland and determine the departure date of the majority of the birds.

3. A search for the roost site.

4. Feeding observations between late June and late August, to explain the Parrots' early departure from the islands and persistence on the mainland.

5. After birds have left the lake, a search in areas containing *Frankenia, Halosarcia halocnemoides, and Sclerostegia arbuscula*, to find the sites used by Lake Connewarre birds in late winter.

6. Assessment of the effect of duck-hunting. How many hunters use the tidal delta: do they disturb the Parrots?

7. Prevention of stock access to the tidal delta.

8. Careful investigation of any proposed engineering works at the lake or upstream, so that the hydrology and vegetation of the tidal delta is not altered.

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Margaret Cameron helped by recruiting counters. Richard Loyn, Pat Russell, Gordon McCarthy and Graeme Tribe provided helpful information on previous Orange-bellied Parrot sightings at the lake, and Richard Loyn also gave lessons on identification of Parrot food plants. Rob Mackenzie allowed us to use his counts and observations made on several visits to the lake.

Jeff Yugovic has kindly given us permission to use his previously published vegetation map (Figure 1), and we were fortunate to be able to draw freely from his comprehensive report on the vegetation in the Lake Connewarre tidal delta (Yugovic, 1985).

Jeff Yugovic, Richard Loyn and Brett Lane made helpful comments on a draft of this manuscript.

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Table 1: Orange-bellied Parrot food plants present in the Lake Connewarre survey area.

| **Food plants** | **Vegetation unit** | **Abundance** |
|---|---|---|
| *Sarcocornia quinqueflora*:<br>(Beaded Glasswort) | *Juncus kraussii* rushland | Abundant |
| | Samphire herbland | Abundant |
| | Samphire shrubland | Abundant |
| | *Distichlis distichophylla* grassland | Common |
| *Frankenia pauciflora*:<br>(Southern Sea-heath) | Samphire shrubland | Abundant |
| | Samphire herbland | Common |
| *Suaeda australis*:<br>(Austral Seablite) | *Juncus kraussii* rushland | Common |
| | Samphire herbland | Common |
| | Samphire shrubland | Common |
| *Sclerostegia arbuscula*<br>(Shrubby Glasswort) | Samphire herbland | Occasional |
| | *Juncus kraussii* rushland | Rare |
| *Chenopodium glaucum*<br>(Glaucous Goosefoot) | Samphire shrubland | Occasional |
| *Atriplex prostrata*<br>(previously *hastata*)<br>(Hastate Orache) | *Distichlis distichophylla* grassland | Common |
| | Samphire herbland | Occasional |
| | Samphire shrubland | Occasional |

*Orange-bellied Parrots. Photo: Trevor Pescott*

Table 2: Numbers of Orange-bellied Parrots in the Lake Connewarre survey area in 1986 and 1987.

| DATE | AREAS SURVEYED | ISLAND COUNT | MAINLAND COUNT | TOTAL COUNT |
|---|---|---|---|---|
| **1986** 21 June | Delta islands (partial)<br>E mainland (partial)<br>S mainland (partial) | 28(m) | 4(m) | 32(m) |
| 29 June | Delta islands<br>E mainland<br>S mainland (partial) | 12 | 7(m) | 19(m) |
| **27 July** | **Complete survey** | **0** | **20** | **20** |
| **17 Aug** | **Complete survey** | **0** | **0** | **0** |
| **1987 23 May** | **Complete survey** | **26** | **34** | **60** |
| 28 May | N mainland<br>E mainland | - | 19(m) | 19(m) |
| 14 June | N mainland | - | 7(m) | 7(m) |
| 20 June | Complete survey | 29 | 35 | 64 |
| 25 June | Delta islands (partial)<br>N mainland<br>E mainland | 0(m) | 63(m) | 63(m) |
| 4 July | N mainland | - | 30(m) | 30(m) |
| 6 July | Delta islands (partial) | 4(m) | - | 4(m) |
| **26 July** | **Complete survey** | **0** | **5** | **5** |
| **22 Aug** | **Complete survey** | **0** | **7** | **7** |

-: not surveyed.
(m): minimum total count from partial survey.

Table 3: Numbers of Orange-bellied Parrots on the tidal delta islands in 1986 and 1987.

| DATE | ISLAND* | | | | | | | | | | | | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | a | b | c | d | e | f | g | h | i | j | k | l | |
| 1986 | | | | | | | | | | | | | |
| 21 June | 0 | 3 | 0 | 0 | 3 | 0 | 22 | - | - | - | - | - | 28(m) |
| 29 June | 4 | 2 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| 27 July | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 17 Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1987 | | | | | | | | | | | | | |
| 23 May | 5 | 9 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 26 |
| 20 June | 6 | 19 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 |
| 25 June | 0 | 0 | 0 | 0 | 0 | 0 | - | - | - | - | - | - | 0(m) |
| 6 July | 0 | 4 | - | - | - | - | - | - | - | - | - | - | 4(m) |
| 26 July | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 22 Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. of visits | 10 | 10 | 9 | 9 | 9 | 9 | 8 | 7 | 7 | 7 | 7 | 7 | 10 |
| % visits present | 30 | 50 | 11 | 0 | 33 | 0 | 13 | 14 | 0 | 0 | 0 | 0 | 50 |
| Max. count | 6 | 19 | 2 | 0 | 6 | 0 | 22 | 12 | 0 | 0 | 0 | 0 | 29 |

*: islands designated as in Figure 1.
-: not surveyed.
(m): minimum total count from partial survey.

Table 4: Numbers of Blue-winged Parrots in the Lake Connewarre survey area in 1986 and 1987.

| DATE | | ISLAND COUNT | MAINLAND COUNT | TOTAL COUNT |
|---|---|---|---|---|
| **1986** | 21 June | 0(m) | 5(m) | 5(m) |
| | 29 June | 0 | 17(m) | 17(m) |
| | **27 July** | **0** | **11** | **11** |
| | **17 Aug** | **0** | **0** | **0** |
| **1987** | **23 May** | **0** | **80** | **80** |
| | 14 June | - | 100(m) | 100(m) |
| | **20 June** | **5** | **137** | **142** |
| | 25 June | 0(m) | 130(m) | 130(m) |
| | 4 July | - | 30(m) | 30(m) |
| | 6 July | 0(m) | - | 0(m) |
| | **26 July** | **0** | **52** | **52** |
| | **22 Aug** | **0** | **43** | **43** |

-: not surveyed.
(m): minimum total count from partial survey.

# G. F. N. C. "Campout" Mt. Baw Baw

Jan. 22/26, 1988.

Paul Chaplin

Since our last visit to Baw Baw, the village and public facilities have been considerably extended, but only in a few areas has the natural charm been depleted......................................

Eighteen members attended, and we appreciated the development of the lodge made available to us by the Baw Baw Ski Club.

The weather was generally kind to us, although on Sunday the mountain turned on the unexpected – HAIL and SNOW! – but this did not hinder us in pursuit of our varying interests. Three main tracks were used – to the Summit; the 5 km track around the mountain; and to Mt. St. Phillack and back.

Some 80 plants were identified – the most prominent being the Grass Trigger Plant, Sky Lily, Mountain Gentian, Silver Daisy. Among the orchids, the Blue Veined Sun Orchid, Leek Orchids (2), and Green Bird Orchids. The Baw Baw Berry wrapped around the base of the Snow Gums, and the ferns such as the mother Shield Fern, the Alpine Water Fern and the Ruddy Ground Fern were prominent.

The birds seemed less prevalent than on previous visits, but the variety was there. On the way up the mountain two Lyre birds were seen crossing the road; at the Newlynn Hill Site (now a carpark below the chairlift) seven birds were identified, of which three were not seen on Baw Baw. On the mountain, eighteen species were observed. Of special interest was a Straited Pardalote nesting. The presence of Pipits on the mountain was a surprise, and it was suggested that the sowing of introduced grasses on the ski-slopes had attracted them.

The reference books, photographs of previous visits, the microscope etc. were appreciated and well used.

*Female Flame Robin. Photo: Trevor Pescott*

*Mountain Grasshopper Baw Baw. Photo: Trevor Pescott*

The evening occupations centred around photographs, slides and movies supplied by Francie and Elsie Poole and myself. Baw Baw Club Duty Officer, Roy Hutchison gave an historic and entertaining description of the "Birth of Baw Baw" as a ski resort. The Baw Baw Club was first active at Mt. Erica. They were instrumental in persuading officialdom to give access to Baw Baw, where they built the first hut and tow. They carried all materials and equipment up the mountain on their backs!

We were well looked after by Roy and Phil Hutchison and their family, and appreciated their company and guidance.

## Bird List (Baw Baw)

**Cecily Lawrie**

Grey Currawong
White Browed Scrub-Wren
Flame Robin
Crimson Rosella
White-eared Honeyeater
Pipit
Raven
Wonga Pigeon (2)
Red Wattle-Bird
Magpie
Brown Thornbill
Striated Thornbill
Crescent Honeyeater
Brown Tree-Creeper
Yellow Robin
Striated Pardalote (nesting)
Silvereye
Jacky Winter

### Newlynn Mill

Gold Finches
Silvereyes
Grey Fantails
Gang-Gangs
Flame Robins
Crimson Rosellas

### Lower Sighting

Lyre Bird (2)

Conditions were unfavourable for birdsightings:-
When weather improved birds were about.
Flame Robins were prevalent, with an abundance of female birds
White-eared Honeyeaters were also prevalent and observed even in the wildest weather.

*Veined Sun-orchid. Photo: Trevor Pescott*

# Plant List (Baw Baw)

**Gwen Yarnold**

| | |
|---|---|
| *Blechnum penna-marina* | Alpine Water-fern |
| *Blechnum procerum* | Hard Water-fern |
| *Polystichum proliferum* | Mother Shield-fern |
| *Lycopodium fastigiatum* | Mountain Club-moss |
| *Lycopodium scariosum* | Spreading Club-moss |
| *Podocarpus lawrencei* | Mountain Plum Pine |
| *Poa australis* | Blue grass |
| *Aira caryophylla* | Silvery Hair-grass |
| *Calorophus lateriflorus* | Spreading Rope-rush |
| *Luzula campestris* | Field Woodrush |
| *Herpolirion novae-zelandiae* | Sky Lily |
| *Astelia alpina var. novae-hollandiae* | Silver Astelia |
| *Libertia pulchella* | Pretty Grass-flag |
| *Thelymitra venosa* | Veined Sun-orchid |
| *Prasophyllum alpinum* | Alpine Leek-orchid |
| *Prasophyllum suttonii* | Mauve Leek-orchid |
| *Prasophyllum flavum* | Yellow Leek-orchid |
| *Chiloglottis cornuta* | Green Bird-orchid |
| *Nothofagus cunninghamii* | Myrtle Beech |
| *Orites lancifolia* | Alpine Orites |
| *Scleranthus biflorus* | Knawel |
| *Caltha introloba* | Apline Marsh-marigold |
| *Drimys xerophila* | Alpine Pepper |
| *Drimys lanceolata* | Mountain Pepper |
| *Drosera arcturi* | Alpine Sundew |
| *Acaena anserinifolia* | Bidgee-widgee |
| *Acacia dealbata* | Silver Wattle |
| *Pultenaea muelleri* | Mueller's Bush-pea |
| *Gernaium pilosum (G.pitentillioides)* | Crane's-bill |
| *Oxalis lactea* | Snowdrop Wood-sorrel |
| *Poranthera microphylla* | Small Poranthera |
| *Viola hederacea* | Ivy-leaf Violet |
| *Pimelea alpina* | Alpine Rice-flower |
| *Pimelea axiflora* | Tough Rice-flower |
| *Eucalyptus s. sp. pauciflora niphophila* | White Sallee |
| *Eucalyptus delagentensis* | Alpine Ash |
| *Eucalyptus nitens* | Shining Gum |
| *Leptospermum grandifolium* | Mountain Tea-tree |
| *Callistemon sieberi* | Alpine Bottle-brush |
| *Baeckea gunniana* | Alpine Baeckea |
| *Baeckea utilis* | Mountain Baeckea |
| *Epilobium sp.* | Willow-herb |

| | |
|---|---|
| *Trachymene humilis* | Alpine Trachymene |
| *Oreomyrrhis brevipes* | Carraway |
| *Wittsteinia vacciniacea* | Baw Baw Berry |
| *Gaultheria appressa* | Wax-berry |
| *Leucopogon gelisis* | Beard-heath |
| *Pentechondra pumila* | Carpet Heath |
| *Richea continentis* | Candle Heath |
| *Gentianella diemensis* | Mountain Gentian |
| *Prostanthera cuneata* | Alpine Mint-bush |
| *Veronica nivea* | Milfoil Speedwell |
| *Euphrasia collina* | Puple Eyebright |
| *Euphrasia gibbsiae* | Eyebright |
| *Plantago tasmanica* | Tasman Plantain |
| *Coprosma hirtella* | Rough Coprosma |
| *Coprosma nitida* | Shining Coprosma |
| *Coprosma pumila* | Creeping Coprosma |
| *Aspera gunnii* | Mountain Woodruff |
| *Scaevola hookeri* | Creeping Fan-flower |
| *Stylidium graminifolium* | Grass Trigger-plant |
| *Olearia algida* | Daisy-bush |
| *Olearia phlogopappa* | Dusty Daisy-bush |
| *Celmisia astelifolia* | Silver or Snow-daisy |
| *Lagenophora stipitata* | Blue Bottle-daisy |
| *Brachycome obovata* | Daisy |
| *Cotula filicula* | Mountain Cotula |
| *Craspedia uniflora* | Common Billy-buttons |
| *Helichrysum bracteatum* | Golden Everlasting |
| *Helichrysum var. acuminatum* | ? Orange Everlasting |
| *Helichrysum secundiflorum* | Cascade Everlasting |
| *Senecio linearifolius* | Fireweed Groundsel |
| *Hypochoeris radiata* | Cat's-ear (Flat-weed) |

# A Remnant of Local Vegetation

### Valda Dedman

A couple of kilometres upstream of the Pollocksford bridge there is a dry rocky westward-facing gully running down to the Barwon River, and here you can find an interesting remnant of the original vegetation.

Although there is no permanent water in the gully the vegetation is to some extent characteristic of wetter areas. Large old gnarled Blackwoods *(Acacia melanoxylon)* grown on the slopes, and Tree Violets *(Hymenanthera dentata)* curl their roots around the basalt boulders that tumble down the cleft. Tree Violets are characteristic of basalt plains vegetation wherever free rocks abound the seem almost to preger an obstruction to grow around. Indeed, one plant, right at the top of the gully, has grown vigorously around an abandoned heap of fencing wire. Perhaps the rocks help to conserve moisture by shading the ground below.

There was an understorey of nettles, both the stinging Scrub Nettle *(Urtica incisa)* and the Smooth Nettle (*Australian muelleri),* whose stems are covered with fiercesome hairs and spines but which fortunately do not sting. The Scrub Nettle *did*, and my injured hand eventually became slightly paralysed for several hours. The nettles gave way to bracken (*Pteridium esculentum)* as the soil became sandier closer to the river.

I visited the area in January 1988 when the Kangaroo Apple *(Solanum laciniatum)* was covered with bright purple flowers and bunches of egg-shaped green "apples". The plant was the largest I have ever seen; its stem was as thick as a man's arm. The fruit turns bright orange when ripe and was used as food by the aborigines. The leaves often have the shape of a kangaroo's footprint – hence the common name.

The species I found the most interesting was the White Elderberry *(Sambucus gaudichaudiana),* a softwooded perennial over a metre tall, with large toothed bright green leaves and clusters of wax-velvet white flowers and bunches of clear golden round berries like miniature grapes. The flower petals were closed into balls, and of the purest white. The berries were about 5 mm in diameter, and are edible; I tried them but thought them bland but nevertheless juicy and refreshing.

The White Elderberry is an unusual plant because it occupies two very different habitats in Victoria. It is known from the damp gullies of the Otways and East Gippsland, for it is a shade-loving plant. However, the damp, cool microclimate provided by protective cliffs and gorges and the shade given by the Tree Violets with which it commonly associates in such places enables it to survive there.

I would be interested to know if this plant is still found closer to Geelong; the cliffs at Buckleys Falls would have been an ideal situation for it.

Valda Dedman
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*White Elderberry in flower.*

*White Elderberries.*

*Photo: Valda Dedman*

- 9 MAR 1988

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